

KINDERGARTEN

Assessment Test Math K 1 MID YEAR

Count to 100

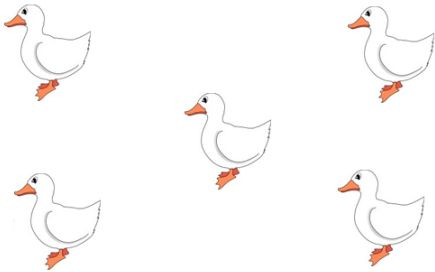
Numbers from 0 to 20

Beginning Addition

Compare Objects and Numbers

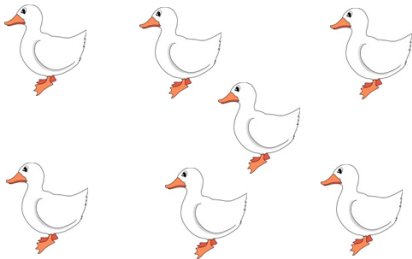
Questions:

1.



How many ducks are in the picture? Available answers: 2; 6; 5. Answer: 5.

2.



How many ducks are in the picture? Available answers: 1; 5; 7. Answer: 7.

3. How do you spell the number 1? Available answers: one; two; four. Answer: one.

4. What is the number that matches the word, three? Available answers: 1; 3; 5. Answer: 3.

5. $2 + 2 = ?$ Available answers: 4; 7; 6. Answer: 4.

6. $3 + 4 = ?$ Available answers: 4; 5; 7. Answer: 7.

7. $4 + 1 = ?$ Available answers: 4; 3; 5. Answer: 5.

8. $3 + 3 = ?$ Available answers: 4; 2; 6. Answer: 6.

9. What number is larger, 4 or 6? Available answers: 4; 6. Answer: 6.

10. What number is smaller, 2 or 7? Available answers: 2; 7. Answer: 2.

KINDERGARTEN

Assessment Test Math K 2 END OF YEAR

Shapes (Days 98-101)

Beginning Subtraction (Days 110-111)

Addition and Subtraction (Days 112 -145)

Questions:

1. $3 + 5 = ?$ Available answers: 10; 8; 7. Answer: 8.
2. $6 + 3 = ?$ Available answers: 9; 11; 22. Answer: 9.
3. $6 - 1 = ?$ Available answers: 5; 6; 9. Answer: 5.
4. $8 - 2 = ?$ Available answers: 4; 6; 5. Answer: 6.
5. $9 - 7 = ?$ Available answers 2; 5; 8. Answer: 2.
6. $22 + 14 = ?$ Available answers: 36; 40; 45. Answer: 36.
7. 6 blue birds are sitting on a branch and 3 fly away. How many blue birds are left? Available answers: 2; 3; 6. Answer: 3.
8. 9 blue birds are sitting on a branch and 5 fly away. How many blue birds are left? Available answers: 2; 3; 4. Answer: 4.
9. $19 - 9 = ?$ Available answers: 10; 8; 12. Answer: 10.
10. $12 - 5 = ?$ Available answers: 7; 5; 9. Answer: 7.

FIRST GRADE

Assessment Test Math 1 1 MID YEAR

Count to 120

Basic Addition and Subtraction

Basic Addition and Subtraction Word Problems

Basic Addition with Algebraic Concepts

Basic Subtraction with Algebraic Concepts

Understanding Tens and Ones

Count by Twos, Fives, and Tens

Addition of Two-Digit Numbers

Greater Than, Less Than, or Equal Comparisons

Addition of Two-Digit Numbers

Subtraction of Two-Digit Numbers

Questions:

1. $6 + 3 = ?$ Available answers: 7; 6; 9. Answer: 9.
2. $7 - 2 = ?$ Available answers: 4; 8; 5. Answer: 5.
3. If there are 3 fish swimming and 5 join them, how many total fish are swimming? Available answers: 6; 8; 10. Answer: 8.
4. What should X be in $3 + X = 6$? Available answers: 3; 5; 2. Answer: 3.
5. In the number 25, which number is in the ones column? Available answers: 2; 5. Answer: 5.
6. How many groups of tens are in the number, 25? Available answers: 2; 3; 5. Answer: 2.
7. If counting by twos, what is the next number after the number 6? Available answers: 4; 7; 8. Answer: 8.
8. Which symbol is correct to compare 4 and 6? Available answers: $>$; $<$; $=$. Answer: $<$.
9. What is $51 + 8$? Available answers: 46; 48; 59. Answer: 59.
10. What is $10 - 7$? Available answers: 3; 5; 8. Answer: 3.

FIRST GRADE

Assessment Test Math 1 2 END OF YEAR

Count to 120 (Days 90-180)

Measurement and Data (Days 98-110)

Double Digit Addition (Days 112-118)

Telling Time (Days 119-130)

Double Digit Subtraction (Days, 136-141)

Shapes (Days 142-162)

Questions:

1. $10 - 9 = ?$ Available answers: 1; 3; 11. Answer: 1.

2.



The ball is than the pencil.

bigger

smaller

Fill in the blank: The ball is _____ than the pencil? Available answers: bigger; smaller.
Answer: bigger (example, Day 99).

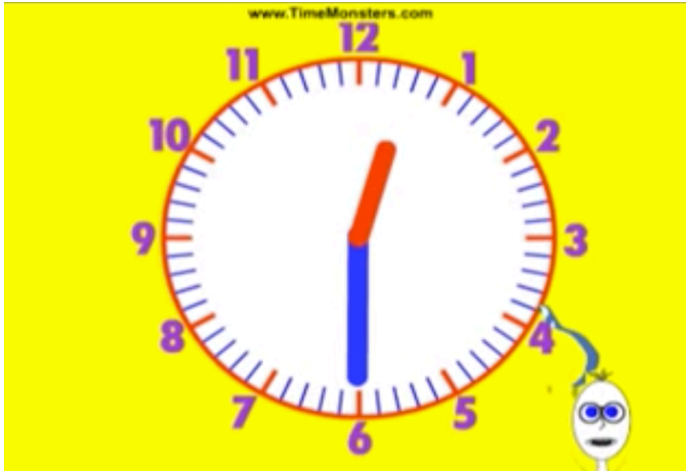
3. 1,000 milliliters = ? Available answers: 1 liter; 1.5 liters; 5 liters. Answer: 1 liter (example, day 100).

4. 2 centimeters = ? Available answers: 10 millimeters; 20 millimeters; 40 millimeters. Answer: 10 millimeters (example, day 104).

5. $45 + 14 = ?$ Available answers: 47; 59; 31. Answer: 59. (example, day 115)

6. How many seconds are in a minute? 30; 60; 90. Answer: 60. (example, day 121).

7.



What time is it in the image above? Available answers: 12:00; 12:30; 6:03. Answer: 12:30. (example, day 124).

8. $48 - 23 = ?$ Available answers: 18; 25; 71. Answer: 25 (example, day 136).

9. $54 - 32 = ?$ Available answers: 22; 34; 86. Answer: 22. (example, day 136)

10. What shape has 3 sides? Available answers: circle; square; triangle. Answer: Triangle (example, day 142).

SECOND GRADE

Assessment Test Math 2 1 MID YEAR

Addition and Subtraction Word Problems

Place Value for Multi-Digit Arithmetic

Addition of Two and Three Digit Numbers with Carrying

Questions:

1. If there are four (4) apples in a box and Sue adds four (4) more, how many total apples are in the box? Available answers: 5; 6; 8. Answer: 8.
2. If there are twelve (12) apples in a box and Sue adds fourteen (14) more, how many total apples are in the box? Available answers: 12; 18; 26. Answer: 26.
3. If there are twenty (20) apples in a box and Mike takes eighth (8) away, how many apples are left in the box? Available answers: 10; 12; 16. Answer: 12.
4. $4 + 8 + 6 = ?$ Available answers: 14; 16; 18. Answer: 18.
5. $10 + 5 + 4 = ?$ Available answers: 13; 19; 22. Answer: 19.
6. $17 - 5 - 3 = ?$ Available answers: 9; 12; 15. Answer: 9.
7. Is the number 5 an even number or odd number? Available answers: even; odd. Answer: odd.
8. What is the place value of 3 in the number 324? Available answers: hundreds; tens; ones. Answer: hundreds.
9. $26 + 37 = ?$ Available answers: 46; 57; 63. Answer: 63.
10. $487 + 145 = ?$ Available answers: 342; 552; 632. Answer: 632.

SECOND GRADE

Assessment Test Math 2 2 END OF YEAR

Subtraction of Two and Three Digit Numbers with Borrowing

Working with U.S. Money Coins and Bills

Measurements of Length

Geometric Shapes and Fractions of Shapes

Questions:

1. $79 + 19 = ?$ Available answers: 89; 98; 119. Answer: 98. (example, day 113).
2. $1,850 + 354 = ?$ Available answers: 2,204; 1,496; 1,154. Answer: 2,204. (example, day 113).
3. $86 - 34 = ?$ Available answers: 44, 52, 120. Answer: 52 (example, day 114).
4. $275 - 178 = ?$ Available answers: 68; 87; 97. Answer: 97. (example, day 118)
5. $7,303 - 333 = ?$ Available answers: 6,970; 7,636; 7,832. Answer: 6,970. (example, day 115).
6. 5 pennies = ? Available answers: 1 nickel; 1 dime; 1 quarter. Answer: 1 nickel. (example, day 119)
7. 20 pennies = ? Available answers 2 nickels; 1 dime; 2 dimes. Answer: 2 dimes. (example, day 119).
- 8.



In the image above, which comparison symbol would you use to compare the value of the two groups of coins? Available answers: $<$; $>$; $=$. Answer: $>$. (example, day 123).

9.



In the image above, what is the value of the amount of money shown? Available answers: \$1.25; \$1.15; \$3.35. Answer: \$3.35 (example, day 124).

10.



What type of shape is the image above? Available answers: Polygon; Non-polygon; Parallelogram. Answer: Polygon. (example, day 142).

THIRD GRADE

Assessment Test Math 3 1 MID YEAR

Multiplication of One and Two Digit Numbers

Division of One and Two Digit Numbers

Multiplication and Division Algebraic Thinking

Greatest Common Factors

Commutative Properties of Multiplication

Questions:

1. $2 \times 5 = ?$ Available answers: 10; 7; 15. Answer: 10.
2. $5 \times 5 = ?$ Available answers: 20; 10; 25. Answer: 25.
3. $6 \times 7 = ?$ Available answers: 42; 49; 63. Answer: 42.
4. $12 \times 4 = ?$ Available answers: 44; 48; 52. Answer: 48.
5. $24 \div 3 = ?$ Available answers: 4; 8; 9. Answer: 8.
6. $76 \div 3 = ?$ Available answers: 25 R1; 32 R3; 21 R2 Answer: 25 R1.
7. Solve for N: $5 \times N = 45$. Available answers: 8; 6; 9. Answer: 9.
8. What is the Greatest Common Factor of 18 and 21? Available answers: 3; 5; 7. Answer: 3.
9. Solve for N: $63 \div N = 7$. Available Answers: 7; 9; 12. Answer: 9.
10. $10 \times 3 \times 5 = ?$ Available answers: 18; 80; 150. Answer: 150.

THIRD GRADE

Assessment Test Math 3 2 END OF YEAR

Addition and Subtraction of Large Numbers

Basic Introduction to Fractions

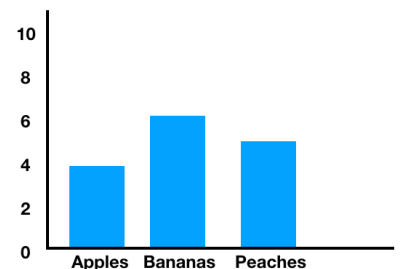
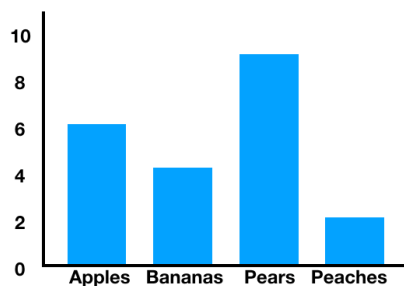
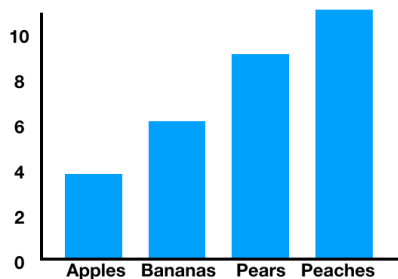
Round Numbers to Nearest Ten

Measurements and Plotting Data on a Chart

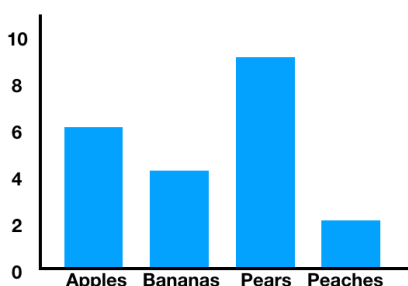
Area of a Rectangle by Multiplication of its Sides

Questions:

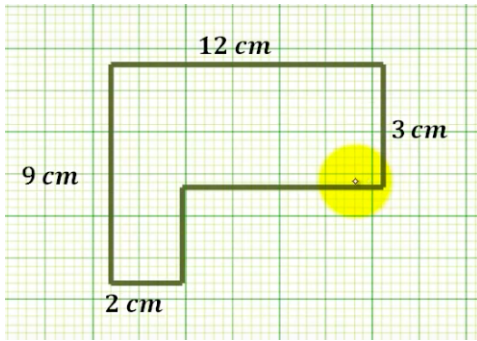
1. $5,836 + 1907 = ?$ Available answers: 3,929; 6,743; 7,743. Answer: 7,743. (example, day 120).
2. $33,220 - 399 = ?$ Available answers: 32,821, 32,930; 32,939. Answer: 32,821. (example, day 125).
3. $1/4 + 2/4 = ?$ Available answers: $3/8$; $3/4$; $1/2$. Answer: $3/4$. (example, day 127).
4. Which fraction is greater: $2/7$ or $5/7$? Available answers: $2/7$; $5/7$; They are equal. Answer: $5/7$ (example, day 131).
5. Which fraction is greater: $1/2$ or $2/4$? Available answers: $1/2$; $2/4$; They are equal. Answer: They are equal. (example, day 132).
6. Round 27 to the nearest ten. Available answers: 20; 27; 30. Answer: 30.
7. What instrument would you use to measure liquid volume? Available answers: thermometer; graduated cylinder; beaker. Answer: graduated cylinder.
8. Which bar graph represents the following groups of fruit: 6 apples, 4 bananas, 9 pears, and 2 peaches. Available answers:



Answer: (example, day 148)

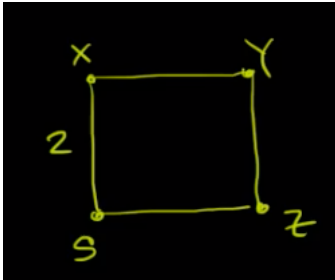


9.



What is the perimeter of the polygon in the image above? Available answers: 26 cm; 36 cm; 42 cm. Answer: 42 cm. (example, day 155)

10.



What is the area of the square in the image above? Available answers: 2; 4; 8. Answer: 4 (example, day 157)

FOURTH GRADE

Assessment Test Math 4 1 MID YEAR

Multiplication and Division Word Problems

Long Multiplication

Long Division with Remainders

Place Value of Whole Numbers and Decimal Numbers

Write Numbers in Expanded Form

Equivalent Fractions

Questions:

1. Tom delivers 23 newspapers 3 times a week. How many newspapers does he deliver each week? Available answers: 56; 77; 69. Answer: 69.
2. John runs 2 miles 3 times per week, and bikes 5 miles 2 times per week. How many total miles does he workout each week? Available answers: 16; 24; 18. Answer: 16.
3. What are all of the factors for the number 20? Available answers: 2, 4, 5, and 10; 1, 2, 4, 5, 10 and 20; 4 and 5. Answer: 1, 2, 4, 5, 10 and 20.
4. What is the next number in this sequence: 5, 4, 3, 1, 5, 4, 3, 1, 5, 4, 3, 1, 5, 4. Available answers: 3; 4; 1. Answer: 3.
5. How do you write 605,328 in word form? Available answers: Six hundred and twenty eight; Six hundred three twenty eight; Six hundred and five thousand, three hundred and twenty eight. Answer: Six hundred and five thousand, three hundred and twenty eight.
6. Which symbol would be used to compare the numbers 3 and 7? Available answers: > ; < ; = . Answer: < .
7. $348 \times 39 = ?$ Available answers: 13,572; 14,340; 9,874. Answer: 13,572.
8. $7435 \div 3 = ?$ Available answers: 3645 R2; 2432 R 4; 2478 R1. Answer: 2478 R1.
9. $5472 \div 38 = ?$ Available answers: 204; 144; 274. Answer: 144.
10. Which fraction is equivalent to $\frac{1}{2}$? Available answers: $\frac{5}{6}$; $\frac{7}{8}$; $\frac{4}{8}$. Answer: $\frac{4}{8}$.

FOURTH GRADE

Assessment Test Math 4 2 END OF YEAR

Compare Fractions

Improper Fractions and Mixed Numbers

Write a Decimal as a Fraction

Addition and Subtraction of Decimals

Questions:

1. Which symbol is correct to compare $\frac{2}{5}$ and $\frac{3}{5}$? Available answers: $>$; $<$; $=$. Answer: $<$. (day 91 example).
2. Which symbol is correct to compare $\frac{3}{8}$ and $\frac{2}{9}$? Available answers: $>$; $<$; $=$. Answer: $>$. (day 91 example).
3. Re-write this improper fraction as a mixed number, $\frac{15}{4}$. Available answers: $3\frac{3}{4}$; $9\frac{1}{4}$; $\frac{4}{15}$. Answer: $3\frac{3}{4}$. (day 95 example).
4. What fraction is equivalent to $\frac{2}{3}$? Available answers: $\frac{2}{6}$; $\frac{3}{6}$; $\frac{4}{6}$. Answer: $\frac{4}{6}$. (day 99 example).
5. $\frac{2}{5} + \frac{1}{5} = ?$ Available answers: $\frac{3}{10}$; $\frac{2}{5}$; $\frac{3}{5}$. Answer: $\frac{3}{5}$. (day 107 example).
6. $3\frac{1}{6} + 4\frac{4}{6} = ?$ Available answers: $7\frac{5}{12}$; $7\frac{5}{6}$; $7\frac{3}{6}$. Answer: $7\frac{5}{6}$. (day 109 example).
7. What is the simplified answer to $\frac{9}{10} - \frac{7}{10} = ?$ Available answers: $\frac{1}{5}$; $\frac{5}{10}$; $\frac{2}{20}$. Answer: $\frac{1}{5}$. (day 115 example).
8. $12 \times \frac{1}{3} = ?$ Available answers: 4; 6; 2. Answer: 4. (day 120 example).
9. Write $\frac{7}{8}$ as a decimal. Available answers: 7.85; .875; .78. Answer: .875 (day 142 example).
10. $72.05 - 8.13 = ?$ Available answers: 63.92; 6.392; 80.13. Answer: 63.92 (day 153 example).

FIFTH GRADE

Assessment Test Math 5 1 MID YEAR

Use Order of Operations to Solve Equations

Practice Long Multiplication and Division

Practice Adding and Subtracting of Decimals

Practice Fraction Word Problems

Questions:

1. $(4 + 8) \times 12 = ?$ Available answers: 124; 132; 144. Answer: 144.
2. $8 \times (14 - 6) = ?$ Available answers: 48; 64; 72. Answer: 64.
3. Write an expression and solve “add 20 and 17, then multiply by 3”. Available answers: 125; 72; 111. Answer: 111.
4. What is the place value of 5 in the number 4,532? Available answers: thousands, hundreds, tens. Answer: hundreds.
5. $432 \times 8 = ?$ Available answers: 3,456; 5,454; 3,656. Answer: 3,456.
6. $15 \div 6 = ?$ Available answers: 2 with a remainder of 3; 3 with remainder of 5; 3. Answer: 2 with a remainder of 3.
7. $56 \div 7 = ?$ Available answers: 8; 6 with a remainder of 1; 6 with a remainder of 2. Answer: 8.
8. $11.05 + 7.25 = ?$ Available answers: 14.4; 16.2; 18.3. Answer: 18.3.
9. $22.3 - 4.2 = ?$ Available answers: 16.2; 18.1; 19.4. Answer: 18.1
10. A piece of wood measures $4 \frac{1}{2}$ feet and needs to be cut in thirds. What is the length of each piece of wood? Available answers: $1 \frac{1}{2}$ feet; 1 foot; $1 \frac{1}{4}$ feet. Answer: $1 \frac{1}{2}$ feet.

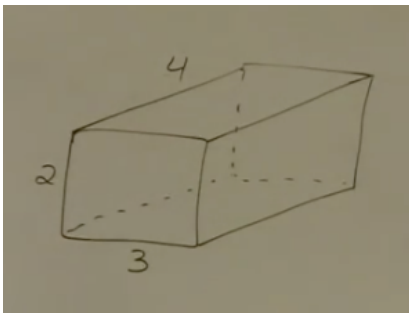
FIFTH GRADE

Assessment Test Math 5 1 END OF YEAR

Multiplication and Division of Fractions
Dividing Fractions and Reciprocal Numbers
Improve Understanding of Fraction Simplification
Fractions and Whole Number Multiplication
Dividing Mixed Number and Whole Number
Improve Understanding of Comparing Fractions
Measurement of Volume
Convert Different Measurement Unit
Basic Geometry
Areas of Triangles

Questions:

1. $32 \times \frac{3}{4} = ?$ Available answers: 12; 24; 28. Answer: 24. (day 75 example).
2. $\frac{3}{4} \div \frac{2}{7} = ?$ Available answers: $\frac{21}{8}$; $\frac{6}{28}$; $\frac{6}{21}$. Answer: $\frac{21}{8}$. (day 80 example).
3. $5 \frac{1}{4} \div 7 = ?$ Available answers: $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$. Answer: $\frac{3}{4}$. (day 85 example).
4. $8 \div \frac{4}{3} = ?$ Available answers: 6; 8; 4. Answer: 6. (day 95 example).
5. Before leaving on a trip, Tiffany filled up her gas tank which holds 16 gallons of gas. After four hours, she noticed the gas tank was $\frac{7}{8}$ full. How many gallons of gas were left in the tank? Available answers: 8; 12; 14. Answer: 14. (day 100 example).
6. How many grams is 3.6 ounces of chocolate? Available answers: 10.2g; 360g; 102.06g. Answer: 102.06g (day 115 example).
7. What is the volume of a 3D rectangle with a length of 6 cm, width of 4cm, and height of 2cm? Available answers: 32 cm^3 ; 36 cm^3 ; 48 cm^3 . Answer: 48 cm^3 .
8. All of the angles of a triangle will add up to be? 60 degrees; 90 degrees; 180 degrees. Answer: 180 degrees. (day 144 example).



9. What is the surface area of the rectangular prism shown above that has a length of 4 inches, width of 3 inches, and height of 2 inches? Available answers: 44 inches; 52 inches; 64 inches. Answer: 52 inches. (day 147 example).
10. What is the area of a triangle with a base of 6 inches and a height of 10 inches? Available answers: 30 inches; 34 inches; 42 inches. Answer: 30 inches. (day 145 example)

SIXTH GRADE

Assessment Test Math 6 1 MID YEAR

Ratios and Proportions

Ratios and Real World Problems

Percents

Coordinate Plane and Plotting Points

Positive and Negative Numbers

Writing and Evaluating Expressions

Questions:

1. To make ice tea, you need 6 tea bags for every 10 cups of water. If you have 18 tea bags, how many cups of water do you need? Available answers: 30; 24; 8. Answer: 30.
2. What is 30% off \$60? Available answers: \$42.00; \$20.00; \$25.50. Answer: \$42.00.
3. What is 20% off \$100? Available answers: \$65.00; \$80.00; \$75.00. Answer: \$80.00.
4. $2/6 \div 1/6 = ?$ Available answers: $1/2$; 3; 2. Answer: 2.
5. $3\ 5/6 \div 1/2 = ?$ Available answers: $5\ 5/6$; $6\ 2/3$; $7\ 2/3$. Answer: $7\ 2/3$.
6. $315 \times 23 = ?$ Available answers: 7,245; 338; 92. Answer: 7,245.
7. $7.56 + 7.9 = ?$ Available answers: 12.36; 14.46; 15.46. Answer: 15.46.
8. $1,607.14 - 3,021.05 = ?$ Available answers: 1,413.91; 4,155.22. Answer: 1,413.91.
9. On a coordinate plane, the coordinates (2, 2) would fall in which Quadrant? Available answers: I; II; III; IV. Answer: I.
10. Kevin's age is three years more than two times Janes age. The sum of their ages if 39. How old are Kevin and Jane? Available answers: Jane is 12 and Kevin is 27; Jane is 14 and Kevin is 26; Jane is 13 and Kevin is 32. Answer: Jane is 12 and Kevin is 27. (day 81 example).

SIXTH GRADE

Assessment Test Math 6 1 END OF YEAR

Writing Equations from Word Problems

Substitute Values for Variables

Generate and Recognize Equivalent Expressions

Solve One Variable Equations

Solve Multiplication Algebra Equations

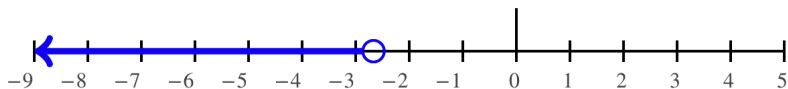
Questions:

- Solve for x : $22 + x = 28$. Available answers: 4; -4; 6. Answer: 6. (example day 108)
- Solve for x if $x = 5$ in the problem $3x + 4$. Available answers: 4; 12; 19. Answer: 19. (example day 83)
- Is this expression equivalent?: $x + 2x - 3 = 4x + 7$. Available answers: yes; no. Answer: no.
- Is this expression equivalent?: $x + 3x + 3 + 4 = 4x + 7$. Available answers: yes; no. Answer: yes. (example, day 91)
- Which expression is equivalent to $3x + 2y$? Available answers: $5x - x - y + 3y$; $3x + y - y + 5x$; $x + 2x + 3y - y$. Answer: $x + 2x + 3y - y$. (example day 92)
- Solve for x : $3x+7<-8$. Available answers:

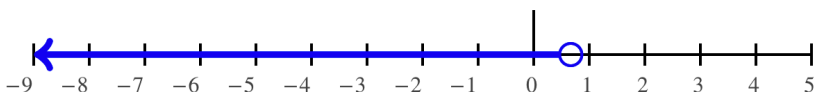
$$x < -5$$



$$x < \frac{-8}{3}$$



$$x < \frac{2}{3}$$



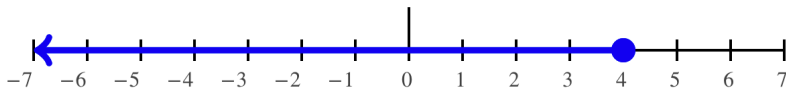
Answer:

$$x < -5$$

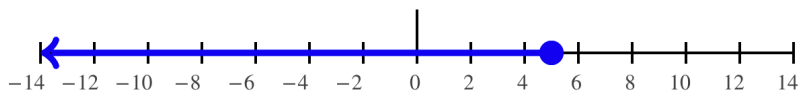


7. Solve for x , $4x - 8 \leq 12$. Available answers:

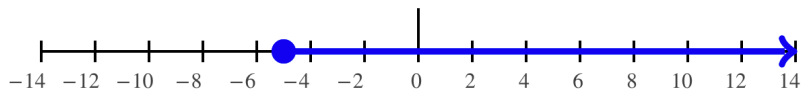
$$x \leq 4$$



$$x \leq 5$$

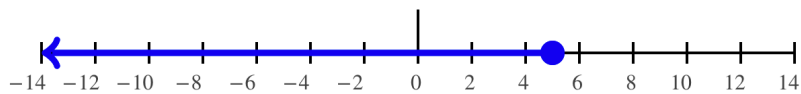


$$x \geq -5$$



Answer: (example day 97).

$$x \leq 5$$



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8. During the basketball season, Jason scored 43 points. He scored 5 fewer points than three times the number Kevin did. How many points did Kevin score? Write an equation and solve. Available answers: 9; 12; 16. Answer: 16. (example day 106).
9. $5x = 30$. Available answers: 5; 6; 15. answer: 6. (example day 109).
10. $x/3 = 27$. Available answers: 9; -3; 81. Answer: 81. (example day 111).

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SEVENTH GRADE

Assessment Test Math 7 1 MID YEAR

Ratios and Proportions

Proportional Relationships

Multiplying and Dividing Real Numbers and Integers

The Distributed Property

Simple One Variable Equations

Write Simple Equations for Unknown Values to Solve Real Word Problems

Write an Inequality from a Word Problem

Questions:

1. John has $\frac{3}{4}$ of a quart of orange juice and needs to fill it equally in cups that hold $\frac{1}{10}$ of a quart. How many cups can he fill? Available answers: 4; 6; 7. Answer: 7.
2. If something cost \$125 and it is on sale for 40% off, what is the final sale price? Available answers: \$65; \$70; \$75. Answer: \$75.
3. If something cost \$25 and it is on sale for 5% off, what is the final sale price? Available answers: \$22.50; \$23.75; \$24.25. Answer: \$23.75.
4. $-4 - (-4) = ?$ Available answers: 4; 0; -4. Answer: 0.
5. $25 + (-12) = ?$ Available answers: 13; 12; -12. Answer: 13.
6. $(-72) \times 5 = ?$ Available answers: -60; -360; -136. Answer: -360.
7. $(-45) \div (-9) = ?$ Available answers: -5; 0; 5. Answer: 5.
8. Use the distributed property to solve, $2(5 + 3)$. Available answers: 16; 14; 18. Answer: 1.
9. Solve for x: $14x + 25 = 32$. Available answers: $\frac{1}{2}$; 2; 12. Answer: $\frac{1}{2}$.
10. If a widget factory has a fixed operating cost of \$3,600 per day plus a cost of \$1.40 per widget produced. If a widget sells for \$4.20, what is the least number of widgets that must be sold per day to make a profit? Available answer: 1,286; 978; 1,159. Answer: 1,286. (day 76 example)

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Assessment Test Math 7 2 END OF YEAR

Properties of Triangles and Measuring Triangles

Scale Factor and Scaling Shapes

Understanding 3 Dimensional Figures

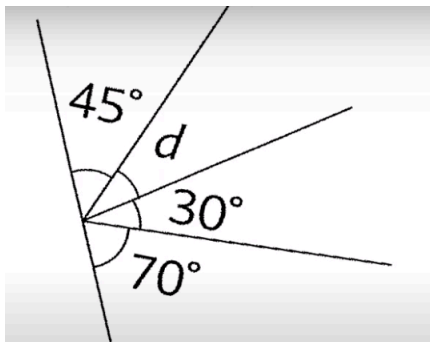
Area of a Circle

Solve Unknown Values of Angles

Basic Introduction to Statistics and Probability

Questions:

1. Equilateral triangles always have? Available answers: 60 degree angles; 80 degree angles; 90 degree angles. Answer: 60 degree angles (example day 80).
2. True or false, triangles have parallel sides. Available answers: true; false. Answer: false. (example day 80).
3. What do all right triangles have? Available answers: 90 degree angle; parallel sides; rotational symmetry. Answer: 90 degree angle.
4. Two triangles have angles with the same degrees. One triangle has a base of 7 and one has a base of 21. What is the scale factor of the two triangles? Available answers: 3; 5; 7. Answer: 3. (example day 85)
5. I have a square base and four triangular sides. What three dimensional figure am I? Available answers: rectangular prism; triangular prism; pyramid. Answer: pyramid.
6. Find the area of a circle with a radius of 3. Available answers: Area = π ; Area = π ;6; Area = π ;16; Answer: Area = π ;9 (example day 92).
7. Solve for angle, "d" in the image below.



Available answers: 20 degrees; 25 degrees; 35 degrees. Answer: 35 degrees. (example day 99)

8. What is the area of a non-right triangle with a base of 12 cm and a height of 8 cm? Available answers: 24 cm²; 36 cm²; 48 cm². Answer: 48 cm². (example day 106).
9. If you have 4 red cards and 3 blue cards, what is the probability of drawing a blue card? Available answers: 28.2%; 34.4%; 42.8%. Answer: 42.8%. (example day 117).
10. If you have a bag of marbles that has 4 blue marbles and 2 pink marbles, what is the probability of picking a pink marble from the bag? Available answers: 1/6; 2/3; 2/6. Answer: 2/6.

EIGHTH GRADE

Assessment Test Math 8 1 MID YEAR

Rational and Irrational Numbers

Integers and Exponents

Exponents and Scientific Notation

One Variable Linear Equations

Solve Linear Equations by Graphing

Two Variable Linear Equations

Questions:

1. How do you write 0.03 as a fraction? Available answers: $1/3$; $3/10$; $3/100$. Answer: $3/100$.
2. Is $\sqrt{2}$ rational or irrational number? Available answers: Rational; Irrational. Answer: Irrational.
3. Is 10 a rational or irrational number: Available answers: Rational; Irrational. answer: Rational.
4. Simply $\sqrt{72}$. Available answers: $8\sqrt{2}$; $8\sqrt{6}$; $6\sqrt{2}$. Answer: $6\sqrt{2}$.
5. What is 10^3 as a number? Available answers: 30; $3/100$; 1,000. answer: 1,000.
6. What is 25,300,000,000,000 written in scientific notation? Available answers: 253×10^{11} ; 2.53×10^{13} ; 25×3^{10} . Answer: 2.53×10^{13} .
7. Is $2/10$ and $6/22$ equivalent? Answers: yes; no. answer: no.
8. $x + (-5) = 37$ Available answers: 32; -57; -42. Answer: 42.
9. $4 - 3x = 2x + 3$. Available answers: -5; $1/2$; $1/5$. Answer: $1/5$.
10. $3x + 4y = 15$. Available answers: $y = -3/4$ and $x = 1/3 + 5y$; $y = -3/4x + 15/4$ and $x = -4/3y + 5$; $y = -3$ and $x = 15$. Answer: $y = -3/4x + 15/4$ and $x = -4/3y + 5$.

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Assessment Test Math 8 2 END OF YEAR

Introduction to Functions

Average Rate of Change

Translation, Rotation, and Reflections

Intersecting Lines and Angles

Parallel Lines and Angles

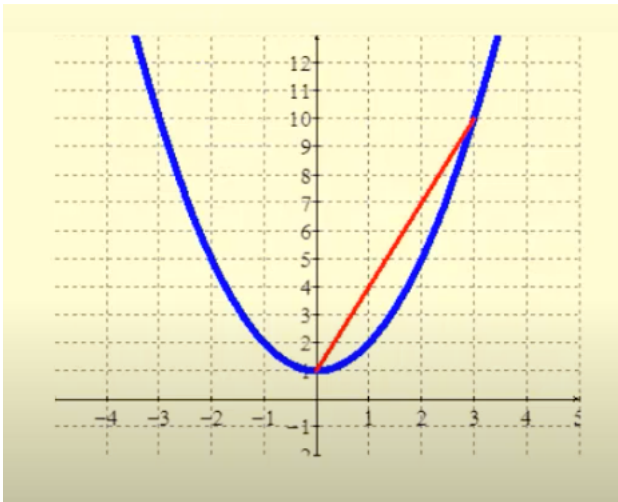
Similar and Congruent Figures

Volume of Spheres, Cones, and Cylinders

Graphing Data on Scatter Plots, Charts, and Tables

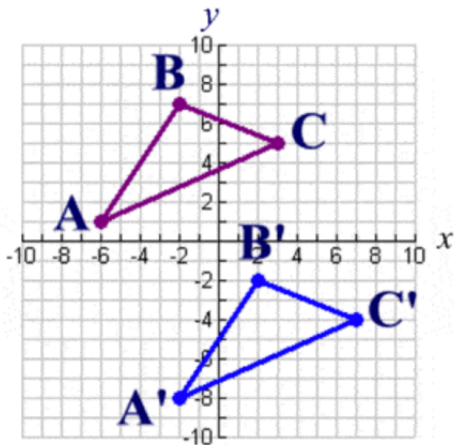
Questions:

1. In a function, the set of all possible inputs or possible x values is called? Available answers: the Function; the Domain, the Range. Answer: the Domain.
2. In a function, the set of all possible outputs or possible y values is called? Available answers: the Function; the Domain; the Range. Answer: The Range.
3. Let's say you pay \$70 per month for digital cable television. Your cable company offers pay per view movies for \$3 per movie. Write a function that models the total cost of your cable bill. Available answers: $f(x) = 70 + 3x$; $3x + y = 70$; $y = 70/3x$. Answer: $f(x) = 70 + 3x$ (example day 72).
4. Write a function for the situation: It cost \$5.00 to enter the theme park and \$2.00 for each ride. Available answers: $y = 5/2x$; $f(x) = 5(2x)$; $f(x) = 5 + 2x$. Answer: $f(x) = 5 + 2x$. (example day 72).
5. Determine the average rate of change of $f(x) = x^2 + 1$ from $x = 0$ to $x = 3$.



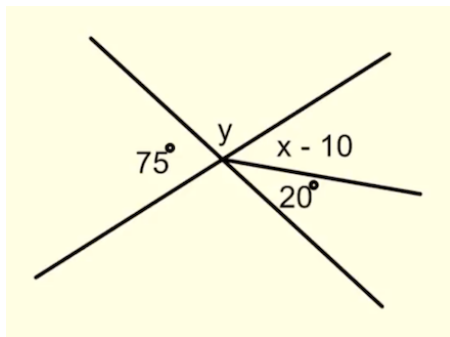
Available answers: 3; 4; 7. Answer: 3.

6. What kind of transformation is shown in the image below.



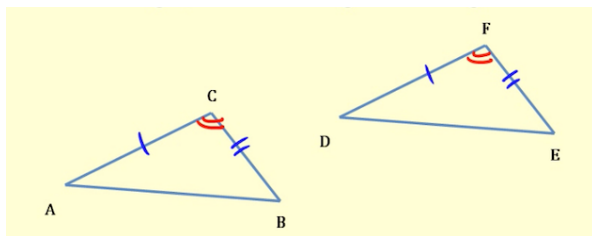
Available answers: Reflection; Translation; Rotation. Answer: Translation.

7. Use the diagram below to find the angles of x and y .



Available answers: $y = 105$ degrees and $x = 75$ degrees; $y = 105$ degrees and $x = 65$ degrees; $y = 150$ degrees and $x = 75$ degrees. Answer: $y = 105$ degrees and $x = 65$ degrees.

8. In the diagram below, each of the two angles shown have two sides that are congruent and point C and F have the same angle, are the two triangles congruent? Available answers: yes; no. Answer: yes. (example day 123)



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9. What is the volume of a sphere with a diameter of 6 cm? Available answers: 97.03 cm; 113.1 cm; 127.02 cm. Answer: 113.1 cm. (example day 150).
10. Evaluate the scatter plot below. What does the data show?
Available answers: As the pages of a novel increase, the checkout of a novel decreases; As the ages of a novel increase, the checkout of a novel increases; More people read novels over 400 pages. Answer: As the pages of a novel increase, the checkout of a novel decreases.

NINTH GRADE

Assessment Test Math 9 1 MID YEAR

Rational Exponents

Rational and Irrational Numbers

Complex Numbers

Solve Quadratic Equations

Solve Polynomial Identities

Using Matrices to Solve Equations

Parts of Expressions

Rewrite Expressions in Different Forms

Advanced Linear Equations

Graph Linear Functions and Inequalities

Questions:

1. $16^{1/2} = ?$ Available answers: $1/2$; 4; 2. Answer: 4.
2. Simply $4\sqrt{16} + 8\sqrt{16}$. Available answers: Simplify $12\sqrt{16}$; $12\sqrt{4}$; $4\sqrt{16}$. Answer: $12\sqrt{16}$.
3. Simply $\sqrt{12} \times \sqrt{3}$. Available answers: $\sqrt{15}$; $12\sqrt{3}$; 6. Answer: 6
4. Is $\sqrt{64}$ a real or imaginary number? Available answers: Real; Imaginary. Answer: Real.
5. Is $\sqrt{-4}$ a real or imaginary number? Available answers: Real; Imaginary. Answer: Imaginary.
6. Is $\sqrt{2}$ a rational or irrational number? Available answers: rational; irrational. Answer: irrational.
7. Is $3/2$ a rational or irrational number? Available answers: rational; irrational. Answer: rational.
8. $(3 + 2i) + (-1 + i) = ?$ Available answers: $2 + 3i$; $-4 + 3i$; $-2 - i$. Answer: $2 + 3i$.
9. $(8 - 3i) + (5 - 6i) = ?$ Available answers: $11 - 11i$; $13 - 9i$; $3 - 9i$. Answer: $13 - 9i$.
10. Rewrite as a complex number, $x^2 + 9$. Available answers: $x + 3i$; $x + \sqrt{3}$; $(x + 3i)(x - 3i)$
Answer: $(x + 3i)(x - 3i)$.

NINTH GRADE

Assessment Test Math 9 2 END OF YEAR

Using Matrices to Solve Equations

Parts of Expressions

Rewrite Expressions in Different Forms

Advanced Linear Equations

Graph Linear Functions and Inequalities

Questions:

1.

$$\begin{bmatrix} 1 & 2 \\ 3 & 8 \end{bmatrix} + \begin{bmatrix} 10 & .6 \\ .4 & 14 \end{bmatrix}$$

Solve the matrix in the image above. Available answers:

$$\begin{bmatrix} 22.6 \\ 21 \end{bmatrix}$$

$$\begin{bmatrix} 12 & 10.6 \\ 11 & 10 \end{bmatrix}$$

$$\begin{bmatrix} 11 & 2.6 \\ 3.4 & 22 \end{bmatrix}$$

Answer: (example Day 66)

$$\begin{bmatrix} 11 & 2.6 \\ 3.4 & 22 \end{bmatrix}$$

2.

$$10 \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$$

Solve the matrix in the image above. Available answers:

$$10 \begin{bmatrix} 5 \\ 9 \end{bmatrix}$$

$$\begin{bmatrix} 12 & 13 \\ 14 & 15 \end{bmatrix}$$

$$\begin{bmatrix} 20 & 30 \\ 40 & 50 \end{bmatrix}$$

Answer: (example Day 66

$$\begin{bmatrix} 20 & 30 \\ 40 & 50 \end{bmatrix}$$

3.

$$\begin{bmatrix} -6 & -2 \\ 1 & 2 \end{bmatrix} \times \begin{bmatrix} -2 & 1 \\ -5 & -5 \end{bmatrix}$$

Solve the matrix in the image above. Available answers:

$$\begin{bmatrix} 22 & 4 \\ -12 & -9 \end{bmatrix}$$

$$\begin{bmatrix} 12 & -2 \\ -5 & -10 \end{bmatrix}$$

$$\begin{bmatrix} 8 \\ 7 \end{bmatrix}$$

Answer: (example Day 68)

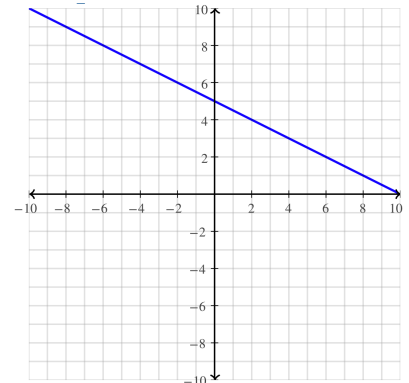
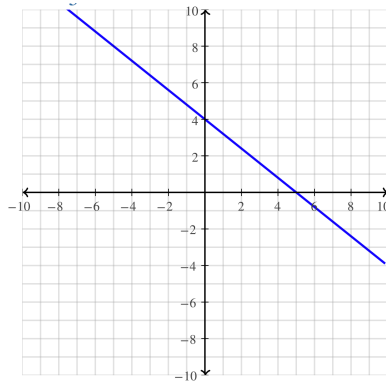
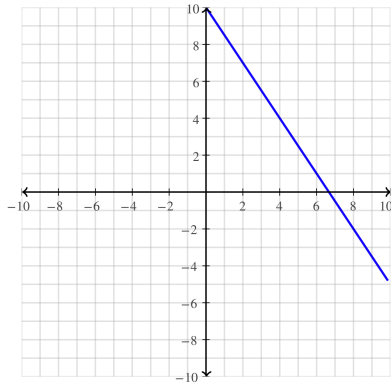
$$\begin{bmatrix} 22 & 4 \\ -12 & -9 \end{bmatrix}$$

4. Is $3x + 2y$ like terms? Available answers: yes; no. Answer: no. (Day 82).
5. In the expression, $3x + 2y - x + 5$, what are the coefficients? Available answers: x and y ; $3x$ and $2y$; 3 , 2 , and -1 . Answer: 3 , 2 and -1 . (example Day 82).
6. Change $3x - 2 - 5x$ into an addition expression. Available answers: $3x + 2 + 5x$; $3x + (-2) + (-5x)$; $3x + (-2 - 5x)$. Answer: $3x + (-2) + (-5x)$. (example Day 85).

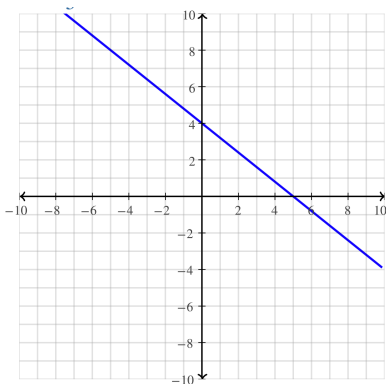
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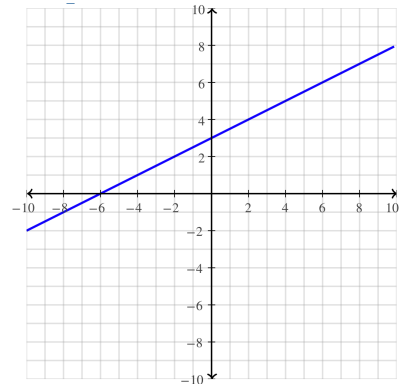
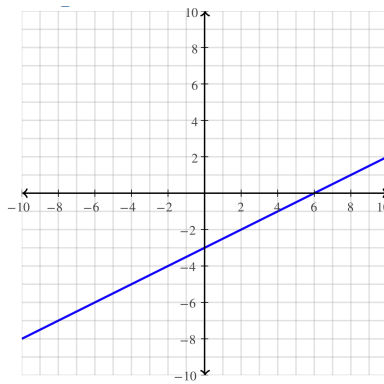
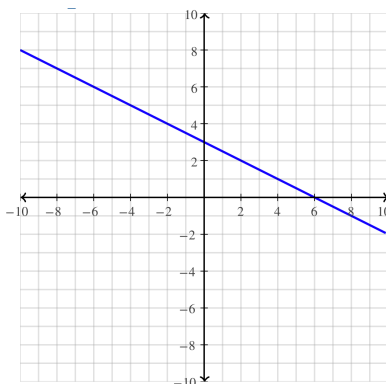
7. Using the distributive property, what is an equivalent expression for $12a + 8b$. Available answers: $4(3a + 2b)$; $2ab(6a + 4b)$; $3a \times 4a + 2b \times 4b$; Answer: $4(3a + 2b)$. (example Day 90).
8. Simply this polynomial, $[8a^4 + (a - 3) - a^2] - [4a^4 + 2(a + 1) + a^2]$. Available answers: $[4a^4 - 2a^2 - a - 5]$; $[4a^4 + 5a^2 + 1]$; $[16a^4 + 2]$. Answer: $[4a^4 - 2a^2 - a - 5]$. (example Day 110).
9. Graph $4x + 5y = 20$. Available answers:



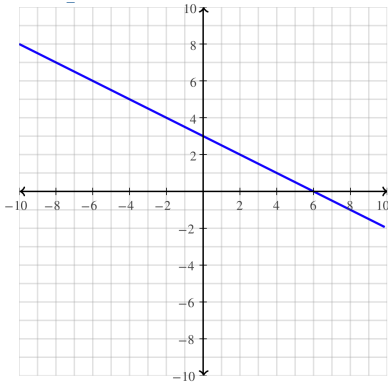
Answer (example Day 135):



10. Graph a linear function using x and y intercepts for the equation, $2x + 4y = 12$. Available answers:



Answer (example Day 165):



TENTH GRADE

Assessment Test Math 10 1 MID YEAR

Points, Lines, and Planes

Radius, Area, Circumference and Other Properties of Circles

Transformations of Shapes on the Coordinate Plane

Transformations and Rigid Motion

Translating Circles

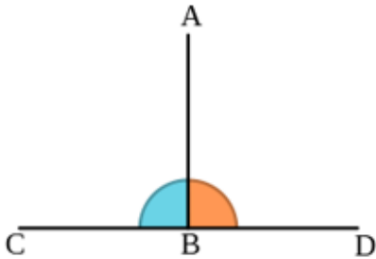
Parallel Lines and Corresponding Angles

Geometric Constructions

Similar and Congruent Triangles

Questions:

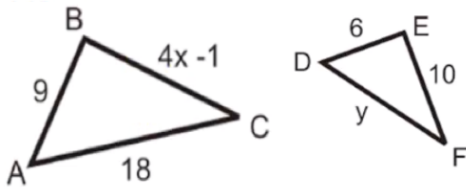
1. A line is perpendicular to another one if the two lines intersect at? Available answers: parallel lines; intersecting lines; right angles. Answer: right angles.



2. In the image above, line AB is perpendicular to line? Available answers: BD; AB; AC. Answer: BD.
3. Do parallel lines intersect? Available answers: yes; no. Answer: no.
4. The outside edge of a circle is called the? Available answers: circumference; diameter; radius. Answer: circumference.
5. If a shape moves upwards, in one direction on a plane, what type of transformation is this? Available answer: translation; rotation; reflection. Answer: translation.
6. If a shape is turned 30 degrees on a plane, what type of transformation is this? Available answers: translation, rotation; reflection. Answer: rotation.
7. A right triangle is an angle that has an angle with? 45 degrees; 90 degrees; 180 degrees. Answer: 90 degrees.
8. An intersecting line with two parallel lines will create angles that? Available answers: have 90 degrees; correspond; are not equal. Answer: correspond.



9. Solve for x and y in the image above. Available answers: $x = 13$ and $y = 115$; $x = 25$ and $y = 85$; $x = 20$ and $y = 124$. Answer: $x = 13$ and $y = 115$. (day 32 example).



10. Given the triangles are similar in the image above, solve for x and y . Available answers: x is 15 and y is 12; x is 13 and y is 16; x is 11 and y is 14. Answer: x is 15 and y is 12. (Day 62 example).

TENTH GRADE

Assessment Test Math 10 2 END OF YEAR

Right Triangles and Right Triangle Equations

Sine, Cosine, and Tangent

Similarity of Circles

Inscribed and Central Angles

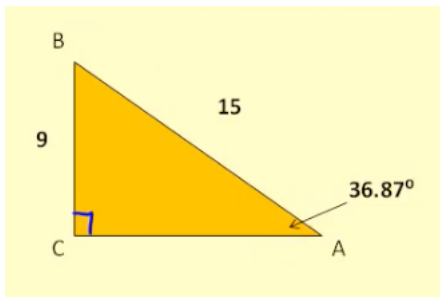
Write Equations Give the Center and Radius of a Circle

Use Slope to Determine if Lines are Parallel or Perpendicular

Find Area and Perimeter of Triangles in the Coordinate Plane

Questions:

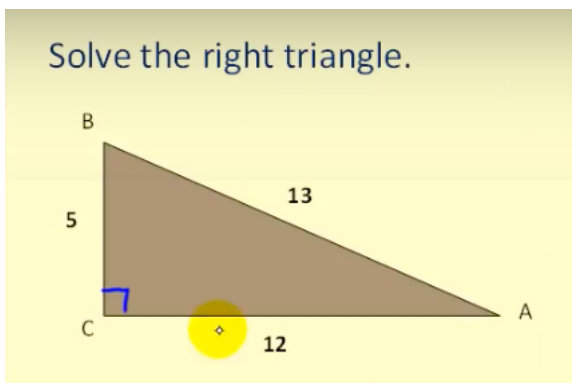
1.



In the right triangle above, what is angle B? Available answers: 45 degrees; 36.87 degrees; 53.13 degrees. Answer: 53.13 degrees. (example Day 80).

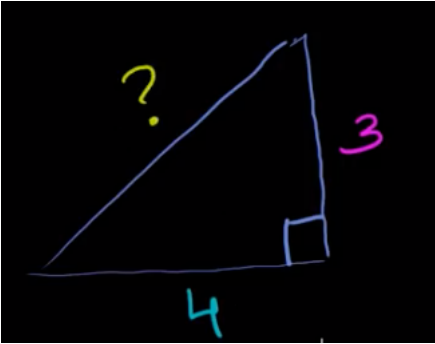
2.

In the right triangle above, what is angle A and angle B? Available answers: A=22.6 degrees



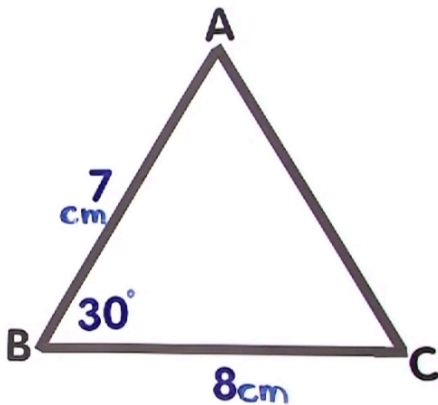
and B=67.4 degrees; A=37 degrees and B=55 degrees; A=30 degrees and 50 degrees. Answer: 22.6 degrees and 67.4 degrees. (example Day 80).

3.



Using the Pythagorean theorem, what is the hypotenuse in the right triangle shown above? Available answers: 4; 5; 6. Answer: 5. (example Day 90).

4.



What is the area of the triangle in the image above? Available answers: 14 cm²; 44 cm²; 32 cm². Answer: 14 cm² (example Day 93).

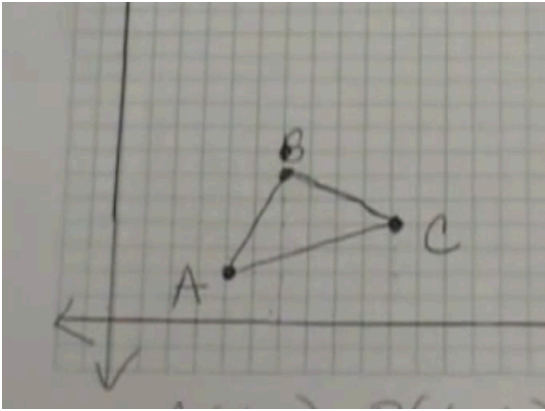
5. If two triangles are congruent, they will have the same shape, but not necessarily the same _____? Available answers: angles; size; degrees. Answer: size. (example Day 110).
6. What is the area of a circle with a radius of 6? Available answers: 24π ; 28.4π ; 36π . Answer: 36π (example Day 110).
7. If you have a circle with a central angle of 80 degrees, what is the degrees of its inscribed angle? Available answers: -80 degrees; 60 degrees; 40 degrees. Answer: 40 degrees (example Day 115).
8. Find the center of a circle given: $x^2 + 16x + y^2 - 14y - 200 = 0$. Available answers: (-5,4); (-3,4); (-8,7). Answer: (-8,7). (example Day 132).

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9. Use slope to determine if lines are parallel or perpendicular to each other, given: $y = 2x + 8$ and $y = -1/2x + 14$. Available answers: The lines are parallel; The lines are perpendicular. Answer: The lines are perpendicular (example Day 152).

10.



What is the area of the triangle on the plane in the image above with the following points on the coordinate plane: $(4,2)$; $(6,6)$; $(10,4)$? Available answers: 6 square units; 8 square units; 10 square units. Answer: 10 square units. (example Day 165).

ELEVENTH GRADE

Assessment Test Math 11 1 MID YEAR

Histograms

Categorical Data

Quantitative and Qualitative Data

Use Data to Compare the Median

Use Data to Calculate the Mean

Modeling Linear Data

Fit a Linear Function to a Scatter Plot

Point of Sale Statistics

Building Statistical Models

Assumptions in Statistical Modeling

Analyze and Evaluate Surveys and Data

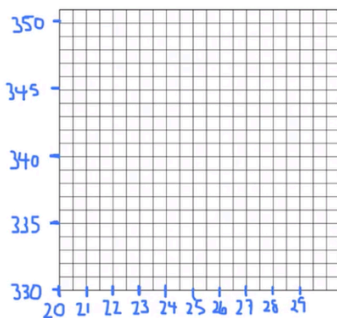
Margin of Error

Compare Data

Questions:

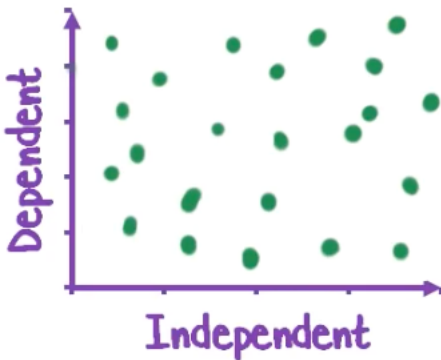
1. A scatter plot can be used to show? Available answers: the relationship between two variables; categorical data; groups of qualitative data. Answer: the relationship between two variables.
2. Scatter plots do not have? Available answers: an x and y axis; a line connecting the data points; bars showing categorical data. Answer: bars showing categorical data.
3. What is the median number among these numbers: 11, 12, 14, 17, 18, 12, 11, 19, 11, 10? Available answers: 12; 15; 17.25. Answer: 12.
4. What is the median number among these numbers: 2, 4, 3, 6, 8, 2, 9? Available answers: 2; 4; 9. Answer: 4.

A marketing firm wishes to find a function that relates the sales S of a product and A , the amount spent on advertising.



A	S
20	335
22	339
22.5	338
24	343
24	341
27	350
28.3	351

5. Find a linear model for the data in the image above by graphing the data. What is the slope? Available answers: 2; 4; 5. Answer: 2. (Day 35 example).



6. What type of data does the scatter plot above show? Available answers: linear; nonlinear.
Answer: nonlinear.



7. What type of data does the scatter plot above show? Available answers: linear; nonlinear.
Answer: linear.
8. A positive correlation is? Available answers: a graph showing data moving together in a positive direction; a graph showing data moving in opposite directions; a graph showing data moving in a negative direction. Answer: a graph showing data moving together in a positive direction.
9. What are three ways you could take a sample of survey data to analyze? Available answers: Simple Random Sample, Systematic Random Sample & Stratified Random Sample; Histogram, Scatter Plot & Bar Chart; Quantitative, Qualitative & Measured. Answer: Simple Random Sample, Systematic Random Sample & Stratified Random Sample.
10. What would you use to compare two columns of survey data? Available answers: Excel; Probability; Scatter Plot. Available answers: Excel.

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ELEVENTH GRADE

Assessment Test Math 11 2 END OF YEAR

Calculating Probability
Outcomes of Probability
Conditional Probability
Random Variables
Making Predictions

Questions:

1. What is the probability of flipping a quarter and having it land on heads? Available answers: once; 25%; 33%; 50%. Answer: 50%. (example Day 95).
2. If you throw one dice, what is the probability of getting a six? Available answers: 1/2; 2/3; 1/6. Answer: 1/6. (example Day 95).
3. In a quiz program, 3 questions on sports, 3 questions on general knowledge, and 4 questions on science are printed separately on 10 cards and placed upside down. John is asked to select 2 cards at random. What is the probability of John selecting 2 questions on science? Available answers: 2/7; 3/12; 2/15. Answer: 2/15. (example Day 96).
4. Each of 5 boys randomly chooses a watch from 12 different styles. What is the probability that at least 2 boys choose the same type of watch? Express the answer as a decimal rounded to three places. Available answers: 1.169; 2.576; 0.618. Answer: 0.618. (example Day 107).
5. Suppose bowl B1 has 2 red and 4 blue coins; bowl B2 has 1 red and 2 blue coins; and bowl B3 contains 5 red and 4 blue coins. Suppose the probabilities for selecting the bowls is not the same but are:

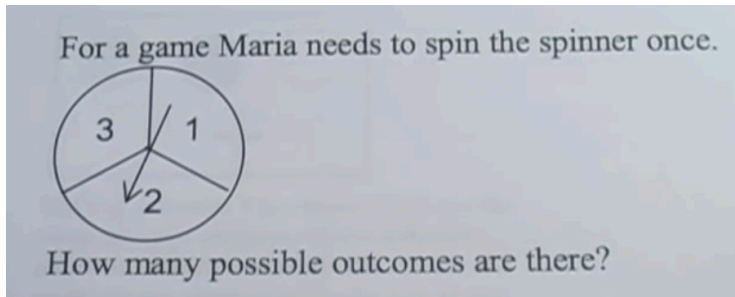
$$P(B1) = 1/3, P(B2) = 1/6, P(B3) = 1/2$$

Compute two things: 1) The probability of drawing a red coin and 2) assuming a red coin was drawn, find the probability that it came from Bowl B1.

Available answers: The probability of drawing a red coin is 4/9 and 1/4 probability it came from bowl B1; The probability of drawing a red coin is 3/8 and 1/2 probability it came from bowl B1; The probability of drawing a red coin is 5/9 and 3/4 probability it came from bowl B1. Answer: The probability of drawing a red coin is 4/9 and 1/4 probability it came from bowl B1. (example Day 110 and 111).

6. What is the probability of rolling a dice and its value is less than 4? 1/6; 1/4; 1/3. Available answers: Answer: 1/3 (example Day 122).
7. What are the odds of flipping a coin 5 times and getting tails on every flip? Available answers: 1/25; 1/32; 1/50. Answer: 1/32. (example Day 130).
8. What is the probability of rolling doubles on two six-sided dice numbered from 1 to 6? Available answers: 4/6; 1/8; 1/6. Answer: 1/6 (example Day 160).

9.



In the image above, how many possible outcomes are there? Available answer: 1; 3; 6.
Answer: 3 (example Day 163).

10. A 12-sided dice is rolled. It has one brown side, one yellow side, nine green sides, and one pink side. What are all the number of outcomes possible and the most likely outcome(s)?
Available answers: 12 possible outcomes and the most likely color is green; 4 possible outcomes and the most likely color is green; 9 possible outcomes and the most likely color is green. Answer: 4 possible outcomes and the most likely color is green (example Day 163).

TWELFTH GRADE

Assessment Test Math 12 1 MID YEAR

Functions

Function Notation

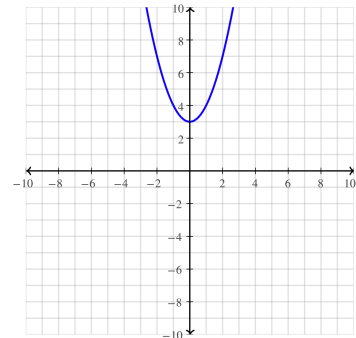
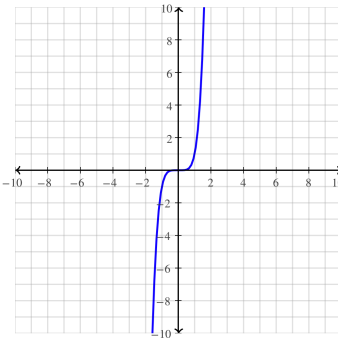
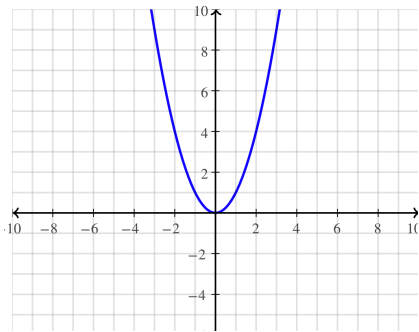
Average Rate of Change on a Graph

Square Root and Cube Functions

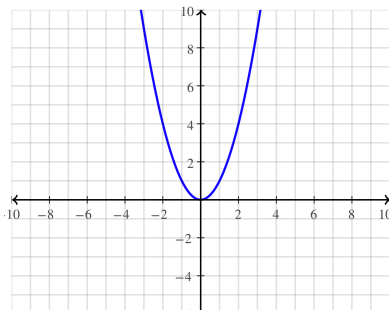
Solve Quadratic Equations by Factoring

Questions:

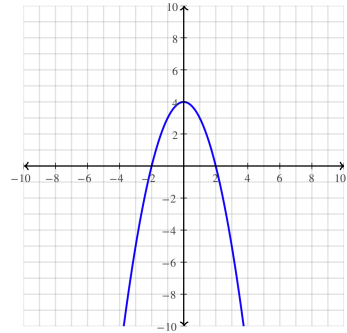
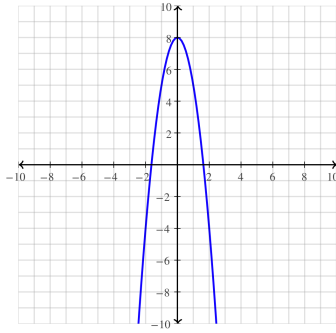
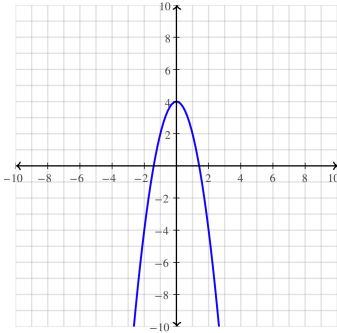
1. Solve for f : $y = f(x)$. Available answers: $f = fx$; $f = y/x$; $f = y/f$. Answer: $f = y/x$.
2. Solve for x : $y = f(x)$. Available answers: $x = y/f$; $x = fx$; $x = y/x$. Answer: $x = y/f$.
3. Graph $f(x) = x^2$. Available answers:



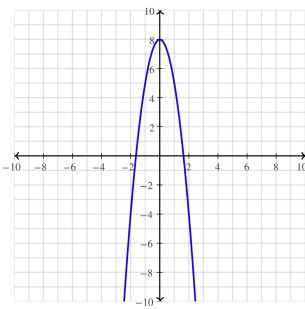
Answer:



4. Graph $f(x) = -3x^2 + 8$. Available answers:



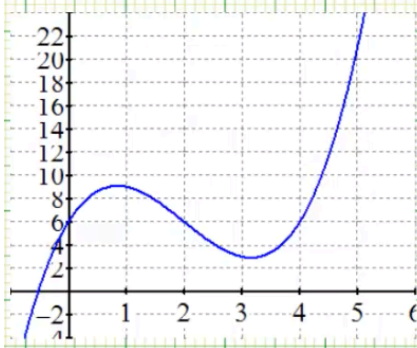
Answer:



5. Find $f(4)$ in $f(x) = x^2 + x$. Available answers: 12; 16; 20. Answer: 20.

6. Find $f(2)$ in $f(x) = 8x - 4x + 3$. Available answers: 28; 16; 11. Answer: 11

Use the graph to determine the average rate of change from $x = 0$ to $x = 1$ and from $x = 2$ to $x = 5$



Average Rate of Change
from $x = 0$ to $x = 1$

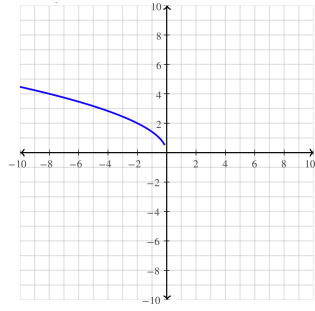
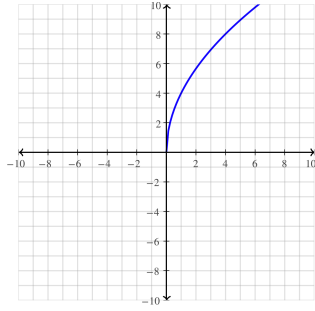
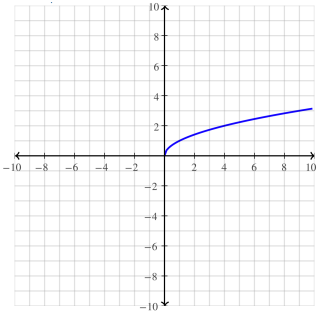
Average Rate of Change
from $x = 2$ to $x = 5$

7. Use the graph above to find the average rate of change from $x = 0$ to $x = 1$ and from $x = 2$ to $x = 5$. Available answers: The average rate of change from $x = 0$ to $x = 1$ is 4 and from $x = 2$ to $x = 5$ is 7; The average rate of change from $x = 0$ to $x = 1$ is 2 and from $x = 2$ to $x = 5$ is 6; The average rate of change from $x = 0$ to $x = 1$ is 3 and from $x = 2$ to $x = 5$ is 5.
Answer: The average rate of change from $x = 0$ to $x = 1$ is 3 and from $x = 2$ to $x = 5$ is 5.
(Day 20)

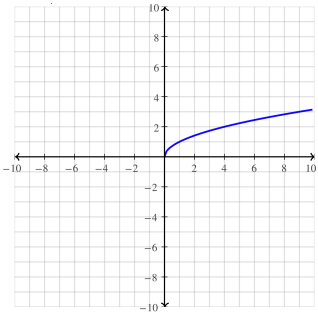
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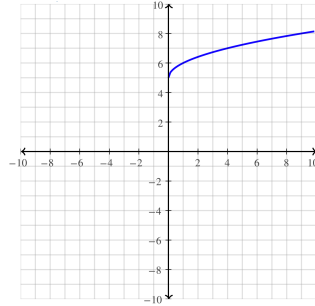
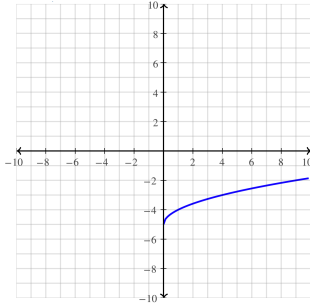
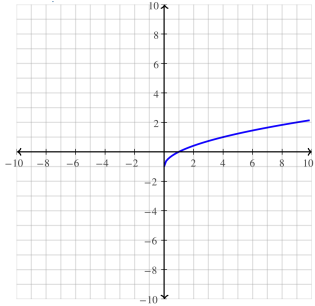
8. Graph $y = \sqrt{x}$. (Day 30 example) Available answers:



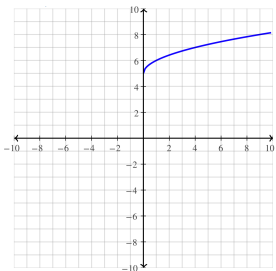
Answer:



9. Graph $y = \sqrt{x + 5}$. (Day 31 example) Available answers:



Answer:



10. Solve this quadratic equation by factoring: $x^2 - 9x + 14 = 0$. Available answers: $x = 2$ and $x = 7$; $x = 12$ and $x = 5$; $x = 2$ and $x = 5$. Answer: $x = 2$ and $x = 7$. (Day 40 example).

Assessment Test Math 12 2 END OF YEAR

Write Functions

Function Transformations

Inverse Functions

Composition of Functions

Logarithmic Equations

Identify Linear Verses Exponential Function

Graphing Exponential Functions

Radian and Degrees

Unit Circle

Questions:

1.

x	$f(x)$
1	5
2	6
3	7
4	8

What is a function rule for the table in the image above?

Available answers: $f(x) = x + 2$; $f(x) = x + 3$; $f(x) = x + 4$. Answer: $f(x) = x + 4$. (example Day 56).

2.

Determine the value of "z" in the table in the image above. Then write the function rule for

Determine the value of z. Then write the function rule for the table.

n	$f(n)$
-4	-7
0	-5
4	-3
8	z
12	1
16	3

the table. $f(n) = 1/2n - 5$; $f(n) = 1/4n - 2$; $f(n) = 2n + 4$. Available answers: Answer: $f(n) = 1/2n - 5$. (example Day 55.)

3.

Horizontal Shift

$y = f(x + c)$ will shift $f(x)$ **LEFT** c units.

$y = f(x - c)$ will shift $f(x)$ **RIGHT** c units.

Compare $f(x) = x^2$ and $f(x - 1) = (x - 1)^2$

X	Y

X	Y

Graph the functions using horizontal and vertical shifts. Compare $f(x) = x^2$ and $f(x-1) = (x-1)^2$ using tables if x values are 1, 2, 3, and 4. How many units did the function shift and in which direction? Available answers: -2 and to the left; -1 and to the right; 1 and to the right. Answer: 1 and to the right. (example Day 77).

4.

What is the inverse of the function in the image above? Available answers: $16x + 3 = f(x)$; $x^2 + 6x + 5 = f^{-1}(x)$; $2x - 3 = f(x)$. Answer: $x^2 + 6x + 5 = f^{-1}(x)$. (example Day 79).

5.

Find the inverse of the function in the image above, if one exists. Available answers: No inverse; $y = 8 - 5x$; $y = 5x - 8^2$; Answer: No inverse. (example Day 80).

6. What is the composition of these two functions, $f(x) = x + 4$ and $g(x) = 5x - 2$? Available answers: $5x + 2$; $5x + 6$; $20x + 2$. Answer: $5x + 2$.

7. Find x in: $\log^{10}1000 = x$. Available answers: 3, 5, 25. Answer: 3. (example Day 102).

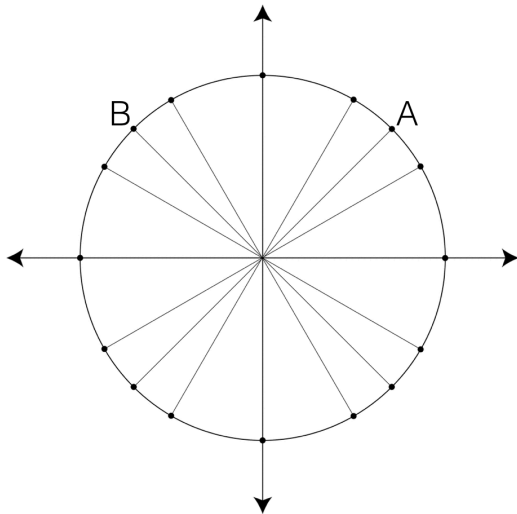
8.

Oak tree		Birch tree	
Time (years)	Branches	Time (years)	Branches
0	34	0	8
3	46	10	33
6	59	20	128
9	70	30	512
12	82	40	2049

The number of branches on an oak tree and a birch tree since 1950 are represented by the tables in the image above. Is it better to model a function that is linear or exponential if you were to write a function for each one? Available answers: Linear for the Oak tree table and Exponential for the Birch tree; Exponential for the Oak tree and Linear for the Birch tree; Linear for the Oak tree and Linear for the Birch tree. Answer: Linear for the Oak tree table and Exponential for the Birch tree.

9. A diamond ring was purchased twenty years ago for \$500. The value of the ring increased by 8% each year. Write an exponential function to represent the value of the ring and solve. Available answers: The function is $y = 500(1 + .08)^{20}$ and the value of the ring is now \$2,330; The function is $y = 500 \times .08 \times 20$ and the value of the ring is now \$800; The function is $y = 500 \times 20/8$ and the value of the ring is now \$1,250. Answer: The function is $y = 500(1 + .08)^{20}$ and the value of the ring is now \$2,330. (example Day 140).

10.



What is point A and B on the Unit Circle? Available answers: A is $\pi/4$ and B is $3\pi/4$; A is 2 and B is $\pi/4$; A is $\pi/2$ and B is $\pi/4$. Answer: A is $\pi/4$ and B is $3\pi/4$. (example Day 149).