Grade: 6 Practice Worksheets
Domain Name: Ratio and Proportion

1. One US dollar is currently worth 84.1 Japanese yen (¥). If you exchange ¥4,205 for US dollars, how much will you have?

    $ ____

2.

    What is the ratio of the swans to the penguin?

    ____ :1

3. The salad has 2 onions and 3 tomatoes.
    What is the ratio of onions to the total number of onions and tomatoes?

    ____

    (Write your answer using the a:b format. For example, 1:1.)

4. The vegetable tray in the refrigerator has five carrots and nine bell peppers.
    What is the ratio of carrots to bell peppers?

5. Which are equivalent ratios to 4:5?
    Check all that are true.
    - 55:44
    - 40:50
    - 44:55
    - 3:11
    - 55:40

    The following ratio table has a mistake. Select the value that does not create an equivalent ratio.

Ratio Table	
2	5
3	10
8	20
10	25

6.

Enter in the missing numbers to create equivalent ratios.

1	2
2	4
3	
	8

7.

8. Solve for the unknown in the equivalent ratios

$$1/5=2/?$$

9. Solve for the unknown in the equivalent ratios.

$$3/9=4/?$$

10. Solve for the unknown in the equivalent ratios.

$$1/5= ?/10$$

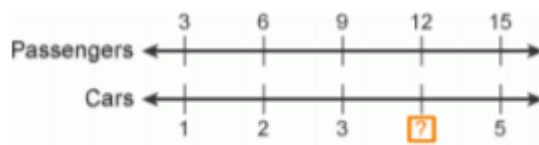Solve for the unknown variable.

$$\frac{1}{4} = \frac{y}{12}$$

☐ = y

11.

12. In the garden, the ratio of roses to daisies is 1:3. There are 8 roses. How many daisies are there?

☐ daisies

13. 34 apartments on 17 floors = ☐ apartments per floor

Passengers: 3   6   9   12   15
Cars: 1   2   3   [?]   5

Find the missing value.

12 passengers in ☐ cars = 3 passengers per car

14.

Find the missing value.

15. 108 people in 2 boats = ☐ people per boat

16. A pump draws 12 gallons of oil in 2 minutes. How many gallons can the pump draw per minute?

☐ gallons per minute

17. In 2008, the world record for swimming the 50 meter freestyle event was 21.34 seconds. Supposing the athlete swam at a constant rate, what was his speed? Round your answer to the nearest hundredth.

$\boxed{}$ m/s

18. The record time for running the Boston Marathon is 2.12 hours at an average speed of 12.5 miles per hour. What distance does the Boston Marathon approximately cover?

$\boxed{}$ miles

19. Dominique droves home from work at an average speed of 36 miles per hour. If the distance from her house to her workplace is 5.4 miles, how long did her commute take?

$\boxed{}$ minutes

20. Convert the percentage into a fraction.

75% =

$$\dfrac{100}{100}$$

21. Rewrite the percentage as a decimal.

9% = $\boxed{}$
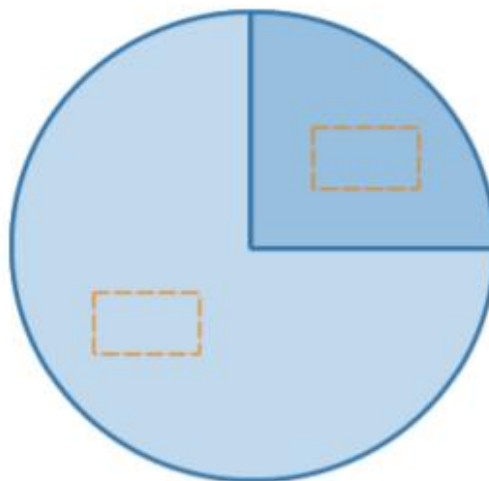
22. 75 × 35% = $\boxed{}$

23. Convert the fraction into a percentage.

2 ⁄5 = $\boxed{}$ %

Label the pie graph with the percentage that best represents each section.

50%   25%

75%

24.

25. Convert the fraction into a percentage.

3 1/4 = %

(Enter number as a whole number without the percentage sign.)

26. 27 is what percent of 50?

[   ] %

27. 170 is what percent of 200?

[   ] %

28. 130 is 50% of what number?

[   ]

29. 21 is 75% of what number?

[   ]

Select the fraction that correctly represents the given percent.

$5\% =$ $\dfrac{5}{100}$ $\dfrac{50}{100}$ $\dfrac{500}{100}$

$25\% =$ $\dfrac{25}{100}$ $\dfrac{2.5}{100}$ $\dfrac{250}{100}$

$50\% =$ $\dfrac{5}{100}$ $\dfrac{50}{100}$ $\dfrac{500}{100}$

$97\% =$ $\dfrac{.97}{100}$ $\dfrac{97}{100}$ $\dfrac{9700}{100}$
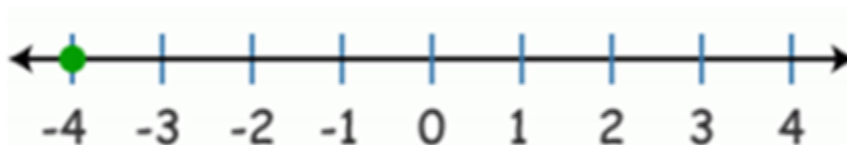
30.

Domain Name: The Number System

1.

[   ] What number is the opposite of 1 ?

2.

3. What number is the opposite of -4 ?

What number describes the height of the Empire state building?

- o 1,454 feet
- o -1,454 feet

4. Where is the point b on the number line?

5. Where is the point z on the number line?

6. Where is point c on the number line?

7. Graham had to pay $22,000 of student loans when he graduated. By the following year, his debt had been reduced to $15,200. How much of his debt did he pay off during that year?

$

8. While backpacking today, Mia climbed up 985 ft to the peak of the mountain and then climbed down 320 ft to a campsite. If she started at an elevation of 4,579 ft this morning, what was the elevation of her campsite?

feet

9. Sort the following numbers as rational or irrartional.

10. Compare.

4   -2

- o >
- o <
- o =

11. Use the number line to determine the correct relationship between the two numbers.

12. Tom is standing on the deck of a pool. The bottom of the pool is -6 feet from the deck. What is the depth of the pool?

feet deep

13.
Find all possible factor pairs of 27?
27 = 1 X
27 = 3 X

14.
 Match each factor pair to the correct number.

15.
 What are the prime factors of 48?
48 = 2 X X 3 X 2 X 2

16.
Identify the greatest common factor from the factor lists below by dragging the circle to highlight the value in both lists.

17.
What is the greatest common factor of 70 and 50?

18.
What is the least common multiple of 4 and 6 ?

19.
The least common denominator of 3/8, 1/4, and 2/3 is

20.
Arrange the numbers to correctly **divide 17,570 by 35**.

21.
A baker made 326 cupcakes. Cupcakes are packed 4 per box. How many boxes of cupcakes are packed? How many cupcakes are left unpacked?
          boxes and   cupcakes left unpacked

22.
The least common denominator of 3/5, 1/4, and 2/9 is

23.
What is the greatest common factor of 20 and 25?

24.
Divide 14,656 by 32.

25.
Divide .
5/7 [Equation] 2/7 =

26.
The point (1,3) is located in which quadrant?
- o   I
- o   II
- o   III
- o   IV

27.
The point (-1,-1) is found in which quadrant?
- o   I
- o   II
- o   III
- o   IV

28.

What are the coordinates of blue dot? (,   )

29.

 What letter is at (-2,1) ?

30.

Subtract

103.973
- 83.984

Domain Name: Number and Operations – Fractions

1.

Solve. [   ]

$628^1 =$

2.

[   ] Solve.

$4^5 =$

3.

[   ] Solve.

$2{,}300^0 =$

4.

[   ] Evaluate.

$(.15)^2 =$

5.

Evaluate:.

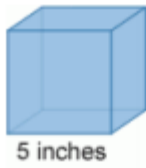[   ] $(1/4)^3 =$

6.

9 feet

Find the area of the square.

[   ] A =   ft^2

7.

Evaluate:.

[   ] $(0.7)^0 =$

8.

5 inches

Find the volume of the cube.

V = ☐ in³

9.

Select the expressions that have two different variables.

$$5x + 6$$

$$2a + 4b$$

$$3y - y$$

$$6x + 2y$$

$$4x + y - 3$$

$$5a - 9a$$

10.

Which of these are expressions?
Check all that are true.

- 1 + 2 = 3
- 14
- 4z + 6
- 16 ÷ 4 - 2 = 2
- 5/6

11.

Select the equivalent expressions.

$10x =$ [10 - x] [10(x)] [10^x]

$3s =$ [3 · s] [3 + s] [3^s]

$4 \cdot b =$ [4 ÷ b] [4b] [b·4]

$cd =$ [c - d] [c + d] [c·d]

12.
Simplify.
$\boxed{}$ 2 + (4 · 4)

13.
Find the value of the expression.
 4 + y
where y = 9

14.
Susanna has played the piano for s years. Patrick has played the piano for 4 more than twice the number of years that Susanna has been playing the piano. Which expression correctly shows the number of years that Patrick has been playing the piano?
- o   2s + 4
- o   4s + 2
- o   2(s + 4)
- o   (s - 4) ÷ 2
- o   none of the above

15.
What is the variable in this expression?
9x + 7x + 13

16.
Which statements are true for the following expression?
5 • (2c + 4 + 9)
Check all that are true.
- ▪ The solution is the sum of two terms.
- ▪ The second factor is itself the sum of three terms.
- ▪ The second factor is a quotient of two factors and another term.
- ▪ The solution is the product of two factors.
- ▪ The coefficient is 2.

17.
Select the student who has combined the like terms correctly.

18.
Drag up the equivalent fractions.

19.
Use the distributive property with factoring to find the equivalent expression.

$27x + 15y = $ (9x + ___ y)

20.
If m = 12, what is the value of the expression 4m - 6?

21.
Is w = 5 a solution to the equation 35 - w = 32?
- o Yes
- o No

22.
Is y = 8 in the solution set of the inequality 5y < 35.
- o No
- o Yes

23.
Use substitution to determine which of the following is a solution for b in the equation:

b - 21 = 8
- o b = 25
- o b = 29
- o b = 23
- o b = 21
- o none of the above

24.
Use substitution to determine which of the following values for y are in the solution set of the inequality.

4 + 4y > 25

Check all that are true.
- ▪ y = 5
- ▪ y = 7
- ▪ y = 6
- ▪ y = 4

25.
Select the mathematical expression that corresponds to the following written expression.

Twenty less than two times c
- o 2c – 20
- o 20c – 2
- o 2 + 20 – c
- o 20c – 2
- o none of the above

26.
Each package of cookies contains 5 cookies. Write an expression for the total number of cookies from an unknown amount of packages p.
- o p × p × p
- o 5p
- o p + 5
- o p + 5p
- o none of the above

27.

Jasmine has 720 dollars in a savings account for college. If she plans on saving 25 more dollars per week, write an expression for the amount in the account after w weeks.

- o   720 + 25w
- o   720 - 25w
- o   25w
- o   25 + 720w
- o   none of the above

28.

Which of the following situations could be represented by the given equation?

2x + 20 = 51

- o   John is making place cards for a fundraising dinner. So far he has made 20 cards and can make 2 more cards each minute. Write an equation that represents the number of minutes, x, it will take to make 51 place cards.
- o   Jillian has 51 stamps in her collection. She recently receives 20 new stamps from a friend. Write an equation that represents the number of stamps she will have if she receives 2 more stamps.
- o   none of the above

29.

Write an equation and use substitution to solve the following problem.

A carpenter makes custom chairs. He currently has 11 chairs in his showroom. If he can build 2 chairs each week, how many weeks will it take him to have a total of 23 chairs?

- o   6 weeks
- o   4 weeks
- o   9 weeks

30.

Write an inequality and use substitution to solve the following problem.

A guitarist sets a goal to practice 200 minutes each week. If he only is going to practice 5 days during the week, which of the following amounts of average daily practice will allow him to reach his goal? Check all that are true.

- ▪   15 minutes per day
- ▪   25 minutes per day
- ▪   30 minutes per day
- ▪   45 minutes per day
- ▪   60 minutes per day

31.

What does it mean for a value to be the solution of the equation

3x − 5 = 23 ?

- o   A solution is the value that when substituted for x makes the equation true.
- o   A solution is the value that when substituted for x leaves both sides of the equation as different numbers.
- o   A solution is the value that is on the right side of the equation.

32.

Solve for x in the following equation.

x + 20 = 47

x =

33.

A pianist charges $200 to perform at a restaurant. At the end of the night she collected her tips and left with a total earning of $310. Write an equation and solve for the amount she made in tips for the performance.

34.

A group of students are watching a documentary that is 58 minutes long. They have already watched 17 minutes of the documentary. How much time is left in the documentary?

minutes

35.

Solve for the w in the following equation.

11w = 55

w =

36.

A golf pro is holding a clinic for new golfers. Six golfers show up to the clinic earning a total of $258 for the golf pro. If each golfer pays the same entrance fee, write an equation and solve for the amount each golfer has to pay.

$

37.

A rock band wants to see how the volume of their music at a concert affects how many CDs they sell at the concert. Let v = volume of music and c = number of CDs sold. What is the independent variable in this situation?

Check all that are true.

- v
- c
- volume of music
- number of CDs sold

38.

Drag the function that matches each table.

39.

There are 9 cookies on each plate, and there are 12 cookies in the cookie jar. Complete the table to show the total number of cookies, c, and the number of plates, p.

Function: c = 9p + 12.

40.

Drag up the inequality that matches the number line.
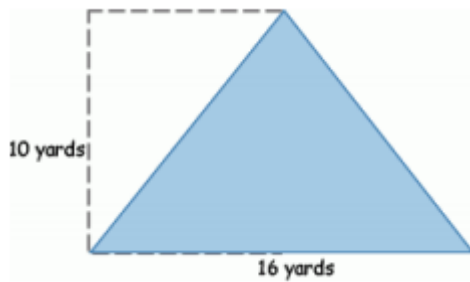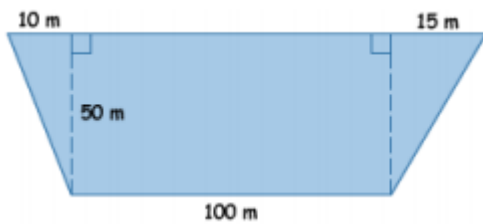

Domain Name: Geometry

1.

Are these 45 45 90 right triangles?

10 in

4 in   4 in
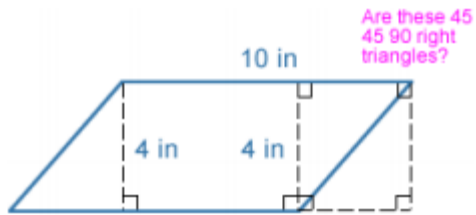
What is the area of the parallelogram?
in²

2.

10 yards

16 yards

What is the area of the triangle?
square yards

3.

10 m   15 m

50 m

100 m

What is the area of this trapezoid?

m²

4.

$\frac{7}{8}$ in

$\frac{1}{2}$ in
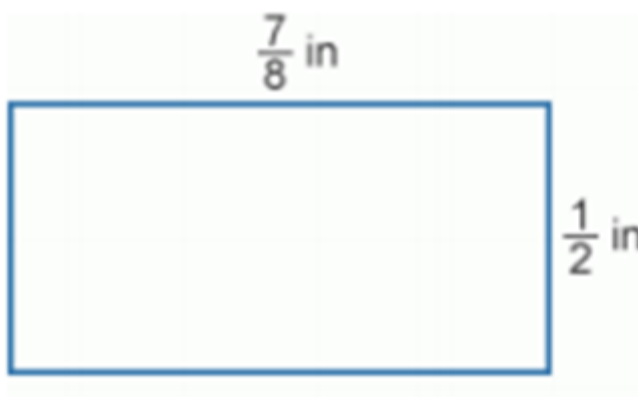
Find the area of this rectangle.
A =   m²

5.

Select the net that represents this figure.

○

○

○

6.

12 ft

16 ft

20 ft
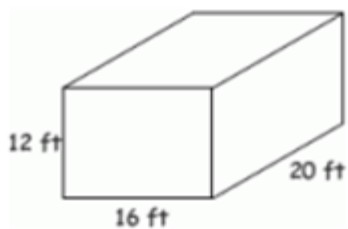
What is the surface area of this rectangular prism?

SA =   ft²

7.

3 ft

5 ft

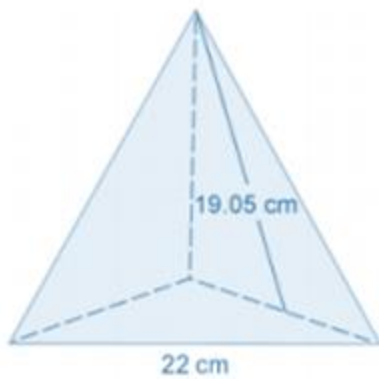4 ft

8 ft
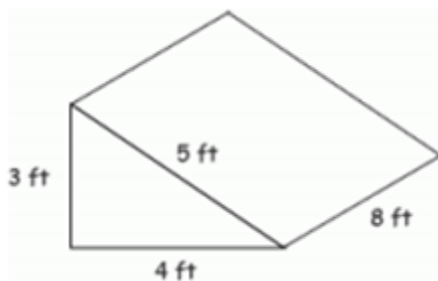
Find the surface area of this triangular prism.

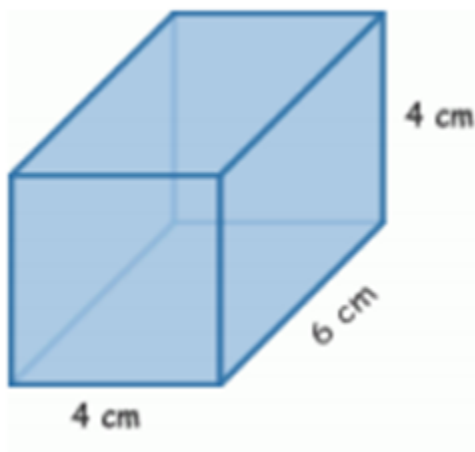SA =   ft²

8.

19.05 cm

22 cm

Find the surface area of this regular triangular pyramid.

SA =   cm²

9.

4 cm

6 cm

4 cm

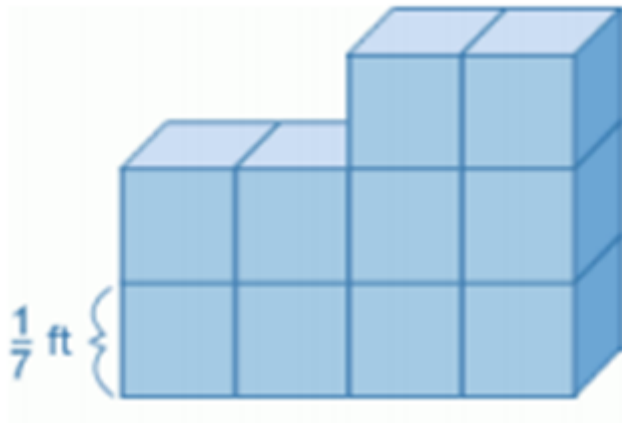Find the volume of the rectangular prism.

V =   cm³

10.

Tori has a wardrobe that is 85 inches tall, 35 inches wide, and 25 inches long. She wants to buy a new wardrobe that is 90 inches tall, 32 inches wide, and 23 inches long. What is the difference in volume of the two wardrobes?

       in³

11.

What is the volume of this object?

V =   ft³

12.

Find the volume of the rectangular prism.

V =   ft³

13.

A rectangular kitchen sink is 2 3⁄4 feet long, 1 5⁄6 feet wide, and 1 1⁄6 feet deep. What is the volume of the sink?

V =   ft³

14.

Find the surface area and volume of a rectangular prism with the following dimensions: Length = 9 cm, Width = 5 cm, Height = 6 cm.

Surface Area =   cm³

Volume =   cm³

15.

Rectangular prism A is 1 foot × 3 feet × 6 feet.
 Rectangular prism B is 3 feet × 3 feet × 3 feet.

What is the surface area of A?   square feet
 What is the surface area of B?   square feet

What is the volume of A?   cubic feet

What is the volume of B?   cubic feet

16.

What are the coordinates of this polygon's vertices?
- (2, 2), (2, 5), and (0, 5)
- (5, 5), (5, 2), and (4, 4)
- (2, 2), (5, 2), and (5, 0)
- (3, 3), (5, 2), and (2, 2)
- (2, 2), (5, 2), and (0, 5)

17.

What is the length of side a?
 What is the length of side b?

18.

What is the area of the triangle?

 square units

19.

A city planner is making a scale model of his city for his office building. The model has a coordinate grid where each unit is 1 meter. On the grid, the tallest building is located at (3, 1), the city park is located at (3, 4), and the public library is located at (4, 4).

The planner intends to convert the triangular space between the three buildings into apartments. What is the area of this space on the model?

 square meters

20.

Drag up the correct perimeter and area of each figure.

Page Break

Domain Name: Statistics and Probability

1.

Which is a statistical question?

- o   What are the heights of all of your friends?
- o   What is the height of your best friend?

2.

Which is a statistical question?

- o   How many cars were sold each day during the month of June?
- o   How many cars were sold today?

3.

What is the mean for this list of numbers? 4, 8, 12, 13

4.

What is the mean for this list of numbers? 4, 8, 18

5.

The heights of 6 randomly selected students in a classroom are 64 inches, 73 inches, 67 inches, 70 inches, 69 inches, and 65 inches. What is the mean of the students' heights?

 inches

6.

The low temperature during 4 days in September was 21°C, 21°C, 19°C and 19°C. What was the mean temperature?

 °C

7.

What is the median for this list of numbers? 4, 14, 8, 19, 22

8.

What is the median for this list of numbers? 11, 23, 43, 22, 9, 15

9.

While driving past stores, Tatum counted the number of cars in the parking lots. He counted: 19, 9, 1, 15, 19, 3 and 5. What was the median of the number of cars in the parking lots?

    cars

10.
Amanda scored 8, 5, 14, 3, 8, and 11 points in six basketball games. What was the median number of points she scored for the six games?

11.

What is the mode for this list of numbers? 3, 5, 1, 3, 2, 7, 10, 3

12.

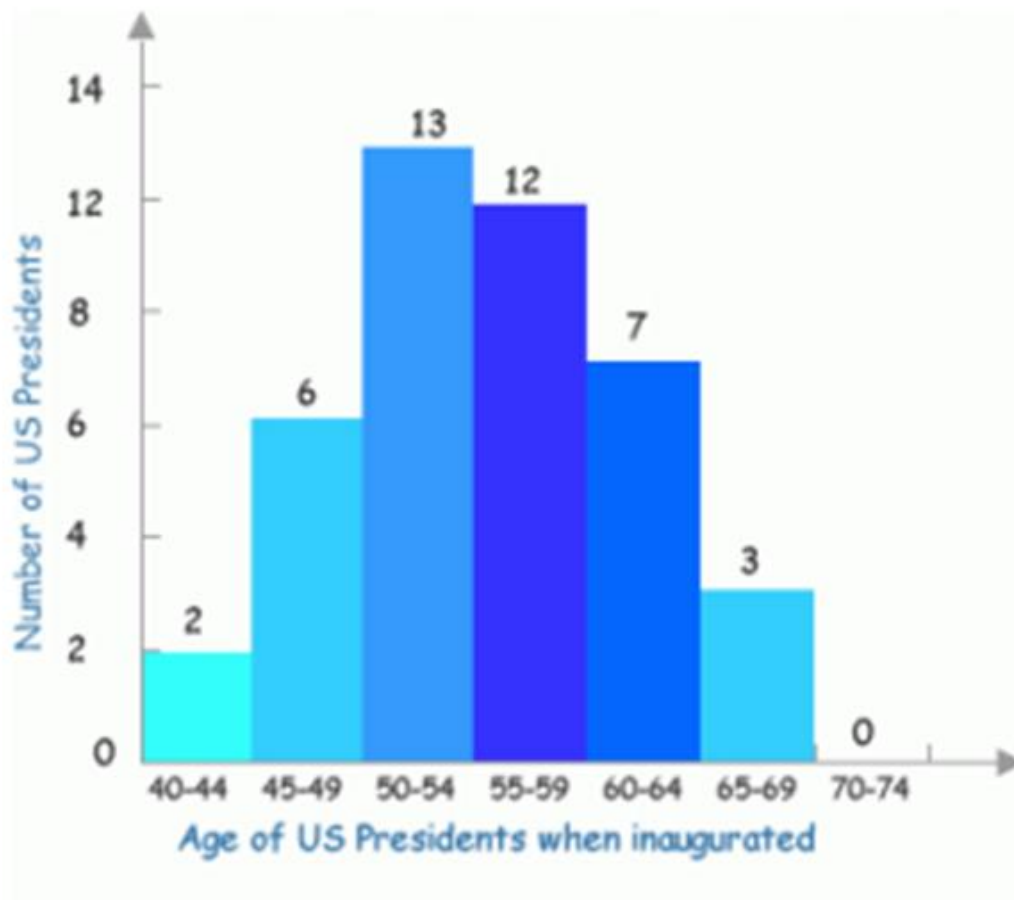What is the mode for this list of numbers? 2, 5, 6, 8, 6, 7, 10, 4

13.

A cashier counted the number of students who ate lunch each day for one week. The rounded results are 700, 600, 600, 1,200, 700, 700, and 900. What was the mode of the number of students who ate lunch?

    students

14.
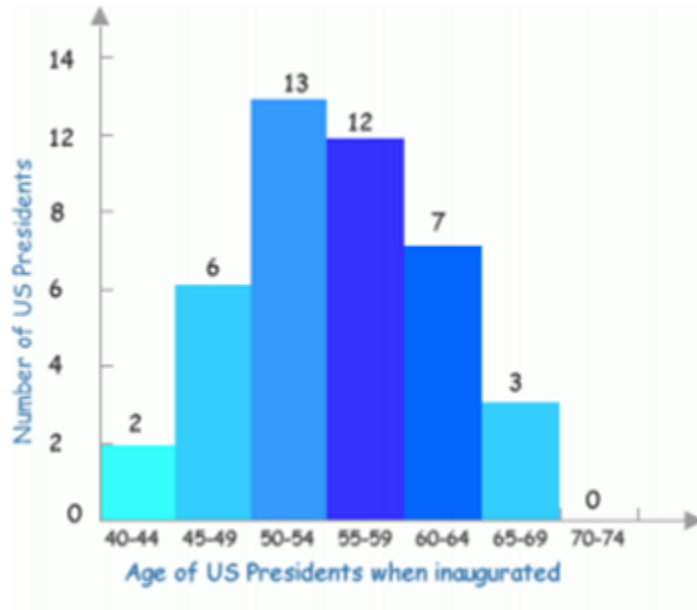What is the range for this list of numbers? 10, 5, 14, 8, 12, 7, 1, 4

15.

What is the most unlikely age for a president to be inaugurated?

- o 65-69
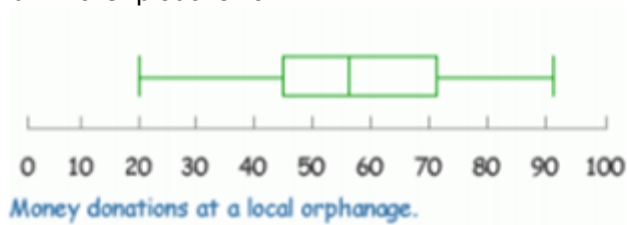- o 40-44
- o 55-59
- o 50-54
- o 70-74

16.

Which age group has 13 US Presidents?
- 40-44
- 45-49
- 50-54
- 55-59
- 60-64

17.

A box-and-whisker plot shows:

Money donations at a local orphanage.

What is the range of the donations made?
- $57 to $92
- $45 to $74
- $20 to $71
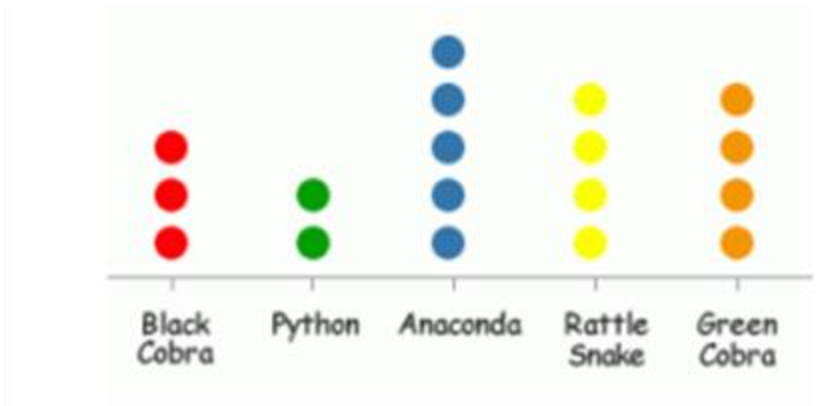- $20 to $92
- $45 to $57

18.

A box-and-whisker plot shows:

Teacher salaries in thousands (for example, 10 = $10,000)

What is being measured?

- o Thousands of dollars
- o Many teachers' salaries
- o Teacher effectiveness
- o Your teacher's salary
- o none of the above
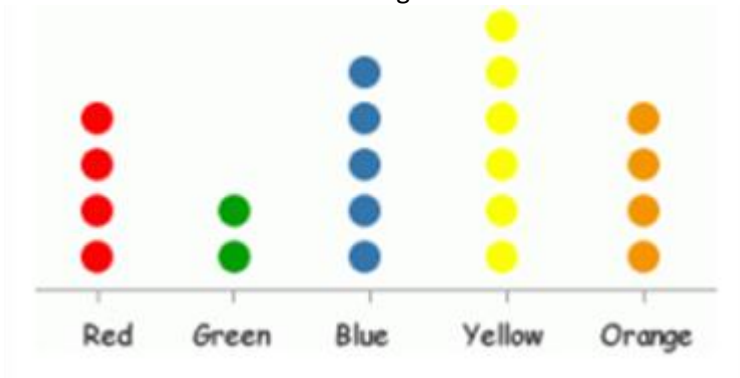
19.

Number of snakes in zoo.

Which type of snake has the lowest number of snakes?

- o Green Cobra
- o Python
- o Rattle Snake
- o Black Cobra
- o Anaconda

20.

Favorite color of students in a 4th grade class.

How many more students like blue than green?

☐ students