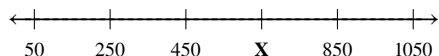


Math Meta Framework Elementary/Middle School Samples

1. Which number should be placed at the **X** on the number line?



- (A) 350 (B) 550 (C) 650 (D) 950

2. Find the sum.

$$\begin{array}{r} 473 \\ + 148 \\ \hline \end{array}$$

3. Look at the number sentence.

$$23 + 6 = 29$$

Create a story problem that is solved with the number sentence.

4. There are 12 children in line at the water slide. There are 7 girls in the line. How many boys are in line at the water slide?

- (A) 3 (B) 5 (C) 7 (D) 9

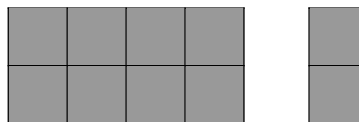
5. Mandy has 83 balloons and 24 party hats. What information is needed to find the number of balloons that are *not* blue?

- (A) The number of balloons that are purple
 (B) The number of birthday candles
 (C) The number of balloons that are blue
 (D) The total number of balloons and party hats

6. Mrs. Micelini needs to make rice for the church potluck dinner. She paid \$28.00 for 8 bags of rice. How much did each bag of rice cost?

- (A) \$0.35 (B) \$3.50
 (C) \$7.50 (D) \$244

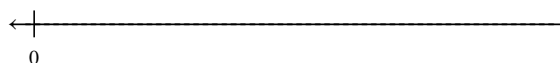
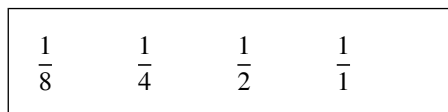
7. Mrs. Summer bought several chocolate bars that her family shared. The model below shows how much of the chocolate bars they ate.



Which fraction is shown by the model?

- (A) $\frac{10}{8}$ (B) $\frac{10}{10}$ (C) $\frac{8}{10}$ (D) $\frac{10}{16}$

- 8.



- a) Create a number line with the fractions.
 b) Label each fraction.
 c) Explain how you have placed the fractions. Use equivalent fractions or drawings.
 d) Use the fractions to write at four number sentences using $>$ and $<$.

9. In each empty box, put the symbol that makes a true statement.

Symbols may be used more than once or not at all.



$$2\frac{4}{5} \quad \square \quad 2\frac{5}{8}$$

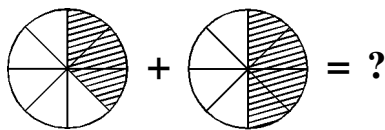
$$1\frac{3}{4} \quad \square \quad 1\frac{6}{8}$$

$$3\frac{4}{9} \quad \square \quad 3\frac{2}{3}$$

10. At a movie preview, velvet rope was attached to a row of brass posts to separate the celebrities on a red carpet from adoring fans.

Marcus bought a length of velvet rope that measured $\frac{94}{12}$ yards long. Write the length using a mixed number.

11. Which problem does the shaded part of the picture represent?

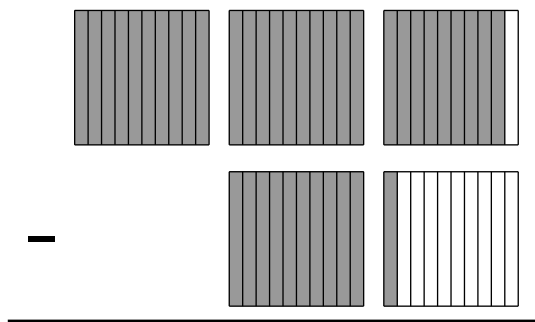


- (A) $\frac{3}{5} + \frac{4}{4} = \frac{7}{9}$ (B) $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$
 (C) $\frac{5}{8} + \frac{4}{8} = \frac{1}{8}$ (D) $\frac{3}{8} + \frac{4}{8} = \frac{1}{8}$

12. Two and three-fourths cups of milk are poured from a pitcher containing $8\frac{1}{2}$ cups of milk. How many cups of milk are left in the pitcher?

- (A) $5\frac{1}{4}$ (B) $5\frac{1}{2}$ (C) $5\frac{3}{4}$ (D) $6\frac{1}{4}$

13. $2.9 - 1.1 =$



- (A) 4.0 (B) 1.8 (C) 1.0 (D) 0.8

14. Ruth's house is 276 feet from Gary's yard. About how far is Ruth's house from Gary's yard?

- (A) 300 feet (B) 280 feet
 (C) 270 feet (D) 250 feet

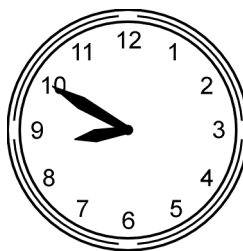
15. Marcos went to the supermarket with a ten dollar bill. He bought 5 pounds of grapes for \$4.67 and the sales tax was \$0.28. How much change should he receive?

- (A) \$6.26 (B) \$6.25
 (C) \$5.05 (D) \$5.03

16. "Half past four" is another way of saying which time?

- (A) quarter till five (B) 4:00
 (C) 4:15 (D) 4:30

17. Charlie's math class starts at 8:50 a.m. The class is 40 minutes long. What time does it end?



18. A science discovery center offers a Free Admission Day every 3rd Wednesday.

About how many weeks are there between each Free Admission Day?

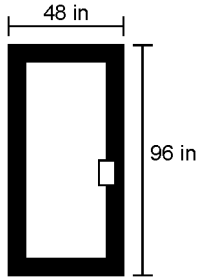
About how many days are there between each Free Admission Day?

The science discovery center offers a Free Admission Day about once a _____.

19. The Galaviz family is going to Disney World in 3 weeks and 2 days. Their friends are going to go on their vacation six days earlier than the Galaviz family. How soon will the friends be leaving on their vacation?

- (A) 2 weeks 2 days (B) 2 weeks 3 days
 (C) 4 weeks 2 days (D) 23 days

20. A door frame in the shape of a rectangle is 96 inches tall and 48 inches wide.



What is the perimeter of the door frame?

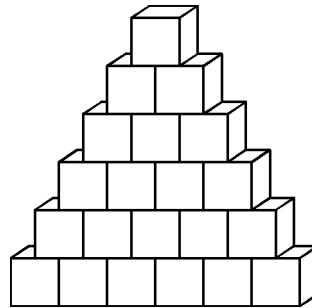
- (A) 256 in (B) 272 in
 (C) 288 in (D) 312 in
21. What is the perimeter of the figure?
-
- (A) 19 inches (B) 21 inches
 (C) 25 inches (D) 28 inches
22. The length of a rectangle is 8 and its width is less than 4. Which statement describes the best estimate of the area of the rectangle?
- (A) Less than 12 (B) Less than 24
 (C) Less than 32 (D) Greater than 36
23. The floor of a square room measures 10 feet by 10 feet. The room has 9-foot ceilings. One can of paint will cover 200 square feet of wall space. Which expression shows the number of cans of paint required to cover 2 of the walls?

- (A) $\frac{9 \times 10}{200}$ (B) $\frac{2 \times 9 \times 10}{200}$
 (C) $\frac{4 \times 9 + 10}{200}$ (D) $\frac{2 \times 10 \times 10}{200}$

24. Which of the following would weigh about an ounce?

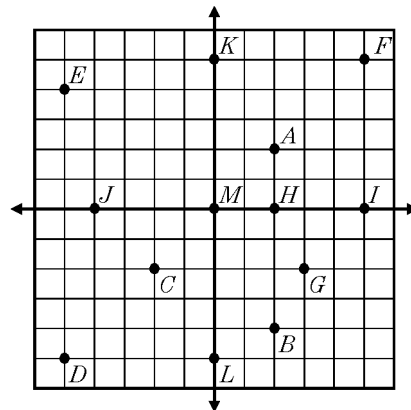
- (A) a dictionary
 (B) a half-dollar coin
 (C) a computer keyboard
 (D) a glass of water

25. A figure made of one-centimeter cubes is shown below.



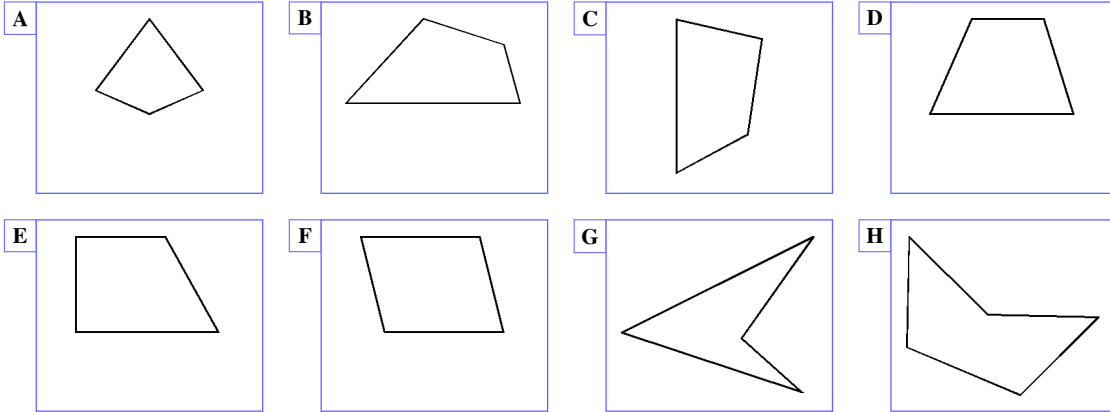
What is the volume of the figure?

- (A) 17 cubic centimeters
 (B) 18 cubic centimeters
 (C) 20 cubic centimeters
 (D) 21 cubic centimeters
26. For which point of the graph is $x = -4$ and $y = 0$?



- (A) K (B) J (C) I (D) M

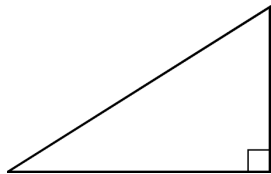
27. Determine whether each shape is best described as a trapezoid, parallelogram, or quadrilateral. Not all shapes will be used.

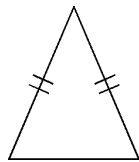


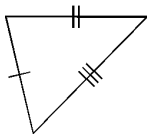
Trapezoid	Parallelogram	Quadrilateral

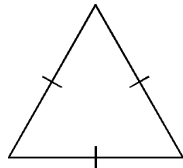
28. On the line below each triangle drag the term that correctly classifies that triangle.

- isosceles
- scalene
- equilateral
- right

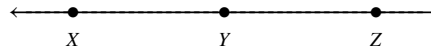








29. Classify the angle.



- (A) obtuse
- (B) right
- (C) straight
- (D) parallel

30. Identify the type of angle which is described by the phrase: "the measure is less than 90°."

- (A) acute
- (B) right
- (C) supplementary
- (D) obtuse

31. Shane scored 22 points at his game on Saturday and Ellis scored 28 points. On Monday Shane scored 12 more points.

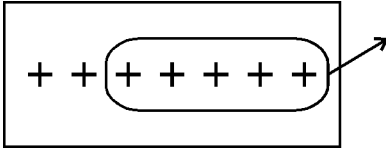
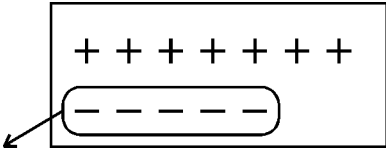
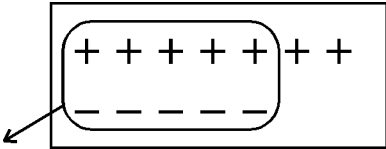
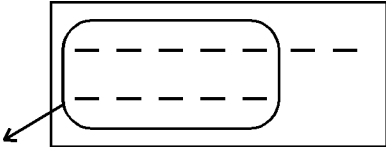
Which number sentence could be used to find how many points Shane and Ellis scored together on Saturday?

- (A) $22 + 28 = \square$
- (B) $28 - 22 = \square$
- (C) $22 + 12 + 28 = \square$
- (D) $22 - 12 = \square$

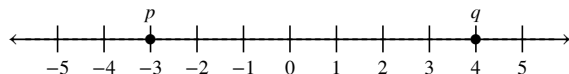
32. Arthur bought 2 CDs on sale for \$22.95. He ended up paying \$24.85, including sales tax. Which number sentence could be used to find s , the amount of sales tax?

- (A) $s = 24.85 \div 22.95$
- (B) $s = 24.85 + 22.95$
- (C) $s = 24.85 - 22.95$
- (D) $s = (22.95 + 24.85) \div 2$

33. Which model could be used to find the sum of -5 and 7 ?

- (A) 
- (B) 
- (C) 
- (D) 

34. On the given number line, what is the distance between points p and q ?



- (A) -12 units
- (B) -7 units
- (C) 1 unit
- (D) 7 units

35. A bungee jumper dives off a bridge 114 meters above a river. Before the bungee stops her fall, she plunges 3 meters into the river. How long was her fall?

- (A) 38 m
- (B) 76 m
- (C) 112 m
- (D) 117 m

36. Lion Bank charges a fee of \$20 for overdrafts up to \$100. The fee increases 25% each additional \$50. A partial fee chart is shown.

**Lion Bank
Overdraft Fees**

Overdraft	Fee
\$0–100	\$20
\$100.01–150	\$25
\$150.01–200	\$31
\$200.01–250	\$39
⋮	⋮

- a) What is the fee for an overdraft of \$387? Round your answer to the nearest dollar.
- b) Which has the smaller fee: overdrafting \$150 three times or \$450 once? Show your calculations.

37. What is the simple interest on \$1,225 if the money is invested at 6% for 5 years?

- (A) \$73.50
- (B) \$367.50
- (C) \$735.00
- (D) \$3,675.00

38. Simplify: $(-2x^3) \times (3x^4) \times (4x^2)$

- (A) $-24x^9$
- (B) $24x^9$
- (C) $24x^{24}$
- (D) $5x^9$

39. Rodney's mother is 5 years older than the square of Rodney's age. If Rodney is 5 years old how old is his mother?

- (A) 25
- (B) 30
- (C) 35
- (D) 45

40. Describe in words or show a mathematical proof that explains the difference between 3.5×10^{-5} and 3.5×10^5 .

41. Which operation should be performed second in the following expression?

$$\left((\sqrt{100} + \sqrt{16}) \times 25^{\frac{1}{2}} - (6 - \sqrt{4}) \right)$$

- (A) multiplication (B) exponent
 (C) addition (D) subtraction

42. Tonja had a bake sale. The information in the table tells how much money she made.

Item	Number Sold	Total Sales
Apple Pie	8	\$48.00
Corn Muffins	5	\$15.00
Oatmeal Cookies	15	\$30.00
Banana Bread	6	\$30.00

What is the most expensive item Tonja sold?

- (A) Apple Pie (B) Corn Muffins
 (C) Oatmeal Cookies (D) Banana Bread

43. There are two production areas. Area E produces erasers and Area P produces pencils. Each area operates at the same rate of production. Area E produces 40 erasers every 8 seconds.

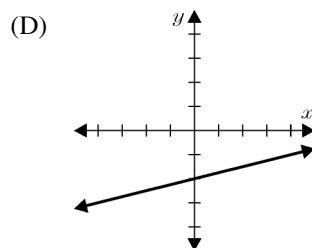
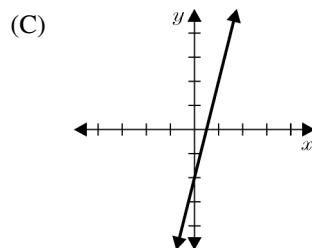
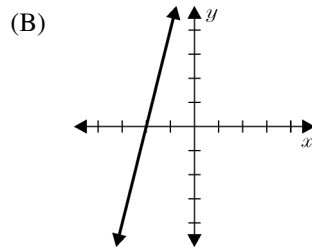
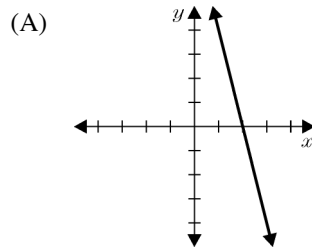
How many seconds will it take Area P to produce 60 pencils?

44. Which equation is equivalent to $6(3x - 4) = -8$?

- (A) $18x = -4$ (B) $18x = 16$
 (C) $9x = -6$ (D) $9x = -4$

45. Explain how $V = \pi r^2 h$ and $h = \frac{V}{\pi r^2}$ are related.

46. The function $y = 4x - 2$ is represented by which graph?



47. Mark the choices that correctly complete the sentence.

A line passes through the coordinates $(2, 7)$ and $(-2, 5)$. The line intersects the x -axis at $\frac{-12}{2}$ and

the y -axis at $\frac{3}{5}$.

48. Juwan kept track of the number of offers he received for credit cards each week, as shown in the table below.

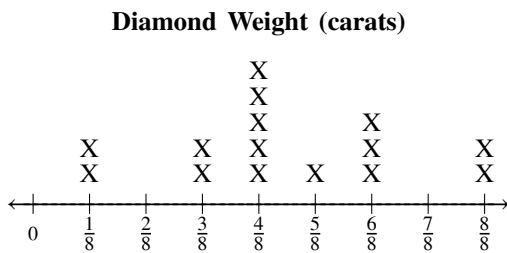
x weeks	2	4	5	7
y total offers	6	10	12	16

Which of the following is the best equation to describe the relationship between the number of weeks and the number of credit card offers Juwan received?

- (A) $y = 2x + 2$ (B) $y = 3x + 2$
 (C) $y = 3x - 2$ (D) $y = 4x - 6$

49. Use the data below to answer the following question(s).

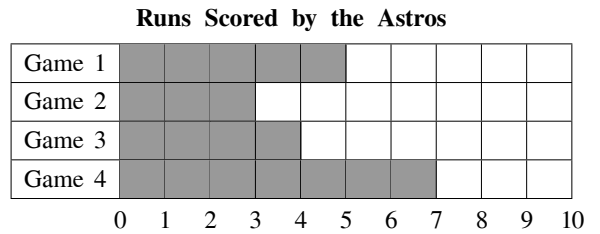
The Diamond Mine is a store that sells diamond rings. The unit of measure to describe the weight of a diamond is called a carat. The store kept track of the weight of diamonds sold during one week and recorded the information in the line plot.



Which weight of diamond was sold most?

- (A) $\frac{1}{4}$ carat (B) $\frac{1}{2}$ carat
 (C) $\frac{5}{8}$ carat (D) $\frac{3}{4}$ carat

50. The graph shows the runs scored by the Astros.



In which game did the Astros score the most runs?

- (A) Game 1 (B) Game 2
 (C) Game 3 (D) Game 4