

Grade 6: End of Year Problems

Name: _____

6.RP.1,2

1. Which of the following is an equivalent ratio to 3:9?

- A 1:3
- B 1:27
- C 3:18
- D 6:12

2. A high-speed elevator can rise 480 feet in 30 seconds. Find the unit rate, in feet per minute, of the elevator.

- A $\frac{1}{16}$
- B 16
- C 240
- D 960

6.RP.3

3. The ratio of nitrogen to potassium in a sample of soil is 12:9. The sample has 36 units of nitrogen. How much potassium does the sample have?

- A 21 units
- B 27 units
- C 33 units
- D 48 units

Understand ratio concepts

RP.1, 2

4 3 2 1 0

Use ratio concepts to solve problems

RP.3

4 3 2 1 0

4. A laundry detergent is sold at four stores.

Store	Size (ounces)	Price
Hawkin's Store	60	\$6.50
Don's Store	54	\$5.50
Allen's Market	48	\$5.61
Value Market	40	\$4.50

Which store has the lowest price per ounce?

A Hawkin's Store

B Don's Store

C Allen's Market

D Value Market

5. A company that makes boxes finds that 3 out of 20 boxes are damaged. What percent of the boxes are damaged?

A 12%

B 15%

C 25%

D 34%

6.NS.1

6. A rectangular parking lot has an area of $\frac{2}{3}$ of a square kilometer. The width is $\frac{1}{2}$ of a kilometer. What is the length, in kilometers, of the parking lot?

A. $\frac{1}{3}$

B. $\frac{2}{3}$

C. $1\frac{1}{3}$

D. $1\frac{2}{3}$

7. Omar has $2\frac{3}{4}$ cups of dough to make dumplings. If he uses $\frac{3}{16}$ cup of dough for each dumpling, how many whole dumplings can Omar make?

A. 4

B. 6

C. 8

D. 14

6.NS.2

8. If the area of a rectangular store is 6,764 square feet and the length of the store is 89 feet, what is the width of the store?

A 601,996

B 68

C 70

D 76

Divide fractions by fractions

NS.1

4 3 2 1 0

Divide fluently with multi-digit whole numbers

NS.2

4 3 2 1 0

6.NS.3

9. Find the sum of 8.971 and 29.43

- A 11.914 B 38.401 C 38.301 D 119.14

10. The price of a theater ticket increased from \$7.50 to \$7.75. The theater sold 315 tickets at the higher price. With the price increase, how much more did the theater earn on the tickets?

- A \$78.00
B \$78.25
C \$78.50
D \$78.75

6.NS.4

11. Machine S and T were both cleaned this week.

- Machine S is cleaned every 12 weeks.
- Machine T is cleaned every 8 weeks.

What is the fewest number of weeks that will pass before both machines are cleaned again in the same week?

- A 4
B 24
C 32
D 96

6.NS.5,6,7

12. Which of the following rational numbers has the greatest value?

A $-\frac{3}{2}$

B -1.2

C -1.8

D $-\frac{5}{4}$

13. Matt had a balance of \$130. He withdrew \$20 and then deposited \$40. What is his bank balance now?

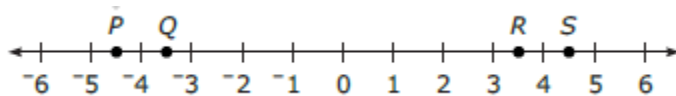
A \$190

B \$70

C \$60

D \$150

14. Which point on the number line represents the number $-4\frac{1}{2}$?



A P

B Q

C R

D S

Apply and extend previous understanding of whole numbers to rational numbers

NS.5. 6a 7

4 3 2 1 0

NS.6b, 8, and G.3

15. A trapezoid in a coordinate plane has vertices $(-2, 5)$, $(-3, -2)$, $(2, -2)$, and $(1, 5)$. What is the height of the trapezoid?

A 3 units

B 5 units

C 7 units

D 9 units

16. The coordinates of the vertices of a rectangle are $(-2, 3)$, $(4, 3)$, $(4, -4)$ and $(-2, -4)$. What is the area of the rectangle?

A 6 square units

B 14 square units

C 2 square units

D 42 square units

6.EE.1,2

17. Which can be represented by the expression $17 - 2x$?

- A 17 less than twice a number x
- B the difference between 17 and twice a number x
- C a number x squared, subtracted from 17
- D 17 less than a number x multiplied by 2

18. What is the value of $\frac{1}{3}x^2 + 2$, when $x = 3$?

- A 3
- B 4
- C 5
- D 6

6.EE.3,4

19. Which expression is equivalent to $5y + 2y + 6x + 2y - x$?

- A $5x + 6y$
- B $5x + 7y$
- C $5x + 9y$
- D $7x + 7y$

20. Which choice is equivalent to the expression $4(x + 2y)$?

- A $4x + 8y$
- B $4x + 2y$
- C $x + 8y$
- D $8xy$

6.EE.5,6,8

21. Diana can use the equation $y = 7x$ to calculate her pay, where y represents the amount of pay, and x represents the number of hours worked. How many hours did Diana work if she was paid \$45.50?

A 5.5 hours

B 6 hours

C 6.5 hours

D 7 hours

22. If $y - 18 = 14$, what is the value of $3(y + 5)$?

A 27

B 32

C 96

D 111

23. Suppose that a stove and a freezer together weigh at least 370 pounds. The weight of the stove is 170 pounds. Which inequality correctly describes these conditions for the weight of the freezer, f ?

A $f \geq 200$

B $f > 200$

C $f \leq 200$

D $f < 200$

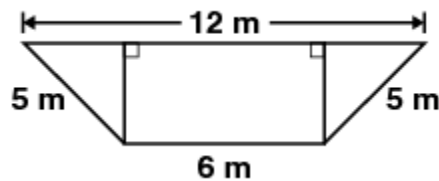
6.EE.7

24. Heather earns \$8.00 per hour for walking a dog. How many hours must she work to earn \$256.00?

- A 42
- B 32
- C 248
- D 2048

6.G.1,4

25. What is the area, in square meters, of the trapezoid shown below? The height of the figure is 4 meters.



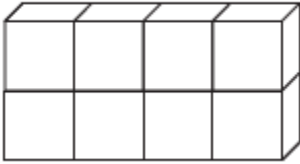
- A 28 square meters
- B 112 square meters
- C 92 square meters
- D 1800 square meters

Solve real-world problems by writing and solving equations
EE.7 4 3 2 1 0

Solve problems involving area and surface area
G.1, 4 4 3 2 1 0

6.G.2

26. The right rectangular prism below is made up of 8 cubes. Each cube has an edge length of $\frac{1}{2}$ inch. What is the volume of this prism?



- A 1 cubic inch
- B 2 cubic inches
- C 4 cubic inches
- D 8 cubic inches

27. A box in the shape of a right rectangular prism has a length of 8.5 inches, a width of 4.5 inches, and a height of 4 inches. What is the **volume**, in cubic inches, of the box?

- A. 52
- B. 153
- C. 180.5
- D. 1,530

Solve problems involving volume

G.2 4 3 2 1 0