1. Which of the following expressions has a value of 4?

   Ⓐ $(16 - 12)^2$

   Ⓑ $-|-4|$

   Ⓒ $(96 \div 8) - 2^3$

   Ⓓ $2^4 - 4^2$

2. Tai's baby brother weighs 3,745 grams. What is his weight in kilograms?

   Ⓐ 0.3745 kg

   Ⓑ 3.745 kg

   Ⓒ 37.45 kg

   Ⓓ 374.5 kg

3. Divide

   a) $6 \div \frac{1}{4} =$

   b) $9 \div \frac{8}{12} =$

4. Which statement represents the situation described below?

   The cost c of a shirt is less than $27.50.

   Ⓐ $c > 27.50$

   Ⓑ $c < 27.50$

   Ⓒ $c = 27.50$

   Ⓓ $27.50 < c$

5. An elevator ascends at a rate of 29.6 feet per second. If a building is 1,450 feet tall, about how long would it take for the elevator to travel from the ground floor to the roof?

   Ⓐ 0.49 minute Ⓒ 4.9 minutes

   Ⓑ 0.82 minute Ⓓ 8.2 minutes

6. Kenji earned the test scores below in English class.

   79, 91, 93, 85, 86, and 88

   After his next test, his mean and median scores both change to 88. How much does he earn on this test?

7. Roberto has run the first 16 miles of a race, which means he is 72% finished. How long is the race?

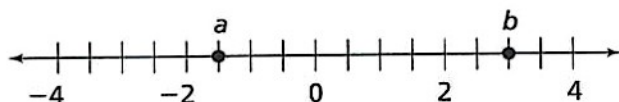Ⓐ 22.86 miles

Ⓑ 11.20 miles

Ⓒ 11.52 miles

Ⓓ 22.22 miles

8. Printer A prints 36 pages every 1.5 minutes. Printer B prints 114 pages every 3 minutes. Printer C prints 115 pages every 5 minutes Which printer prints the fastest?

Ⓐ Printer A

Ⓑ Printer B

Ⓒ Printer C

Ⓓ The rates are equal

9. The drama club spent $8.50 per person on food for a cast party. The total cost of the food was $229.50. How many people were at the cast party?

Ⓐ 27 people

Ⓑ 221 people

Ⓒ 238 people

Ⓓ 1,951 people

10. What are the values of a and b on the number line?

Ⓐ $a = 1.5, b = 2.5$

Ⓑ $a = -1.5, b = 3$

Ⓒ $a = -1.5, b = 2.5$

Ⓓ $a = 1.5, b = 3$

11. The boiling point of jet fuel is 329°F. Rounded to the nearest degree, what is the temperature in degrees Celsius? Use the formula $F = \frac{9}{5}C + 32$, where C represents degrees Celsius and F represents degrees Fahrenheit.

Ⓐ 165°C

Ⓑ 183°C

Ⓒ 201°C

Ⓓ 535°C

12. A gym charges membership dues of $25 per month. Which equation represents the total cost, C, of belonging to the gym for m months?

Ⓐ $C = 25 \div m$

Ⓑ $C = 25m$

Ⓒ $C = m + 25$

Ⓓ $C = m - 25$

13. Divide $5\frac{3}{4} \div 1\frac{1}{2}$.

Ⓐ $3\frac{5}{6}$

Ⓑ $4\frac{1}{4}$

Ⓒ $7\frac{1}{4}$

Ⓓ $8\frac{5}{8}$

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14. A 2-liter bottle of juice costs $2.80. A box containing six $\frac{1}{2}$-liter bottles sells for $3.90. Which option has a higher cost per liter? What is that cost?

Ⓐ 2-liter bottle; $1.40

Ⓑ Box of six $\frac{1}{2}$-liter bottles; $1.30

Ⓒ 2-liter bottle; $2.80

Ⓓ Box of six $\frac{1}{2}$-liter bottles; $3.90

---

15. Which equation represents the data shown in the table below?

x	y
2	5
3	6
4	7
5	8

Ⓐ $y = 2x$

Ⓑ $y = x + 3$

Ⓒ $y = 3x$

Ⓓ $y = x + 1$

---

16. At Avery Middle School, 273 students responded to a survey asking whether a Bulldog, a Lion, or a Tiger should be the new school mascot. Four times as many students chose Bulldog as chose Tiger. Twice as many students chose Lion as chose Tiger. How many students chose Lion?

Ⓐ 39 students

Ⓑ 78 students

Ⓒ 156 students

Ⓓ 273 students
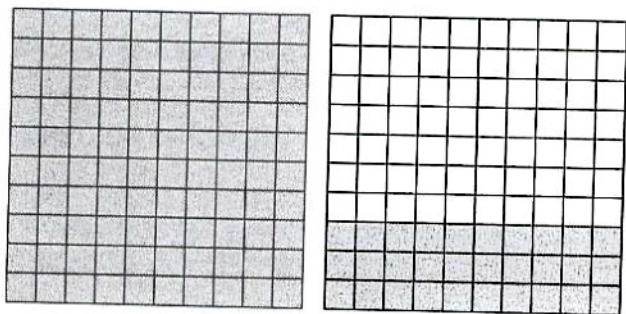
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17. Divide

$$5\frac{4}{5} \div 4\frac{1}{3} =$$

---

18. What percent of 50 is 15?

Ⓐ 0.3%

Ⓑ 7.5%

Ⓒ 30%

Ⓓ 35%

19. Which list of numbers is ordered from least to greatest?

- Ⓐ $6\frac{3}{4}$, 6.57, -6.53, $-6\frac{1}{4}$
- Ⓑ -6.53, $-6\frac{1}{4}$, 6.57, $6\frac{3}{4}$
- Ⓒ $6\frac{3}{4}$, 6.57, $-6\frac{1}{4}$, -6.53
- Ⓓ $-6\frac{1}{4}$, -6.53, 6.57, $6\frac{3}{4}$

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20. What percent is represented by the diagram below?

- Ⓐ 13%
- Ⓑ 65%
- Ⓒ 130%
- Ⓓ 650%

---

21. Solve the equation below for x.
$$x - 15.2 = 76$$

- Ⓐ $x = 5$
- Ⓑ $x = 60.8$
- Ⓒ $x = 91.2$
- Ⓓ $x = 1,155.2$

---

22. Which of the following is a list of equivalent numbers?

- Ⓐ 1.25, $1\frac{1}{4}$, 12.5%
- Ⓑ 0.125, $\frac{1}{4}$, 12.5%
- Ⓒ 12.5, $12\frac{1}{2}$, 125%
- Ⓓ 1.25, $1\frac{1}{4}$, 125%

---

23. The boiling point of water is 212°F. The boiling point of helium is −452°F. How would you compare the temperatures using an inequality?

- Ⓐ −452°F < 212°F
- Ⓑ −452°F > 212°F
- Ⓒ 212°F < −452°F
- Ⓓ 212°F > 452°F

---

24. Sierra and Alek each have five cousins. Their ages are listed below.

Sierra's cousins: 2, 11, 12, 13, 15
Alek's cousins: 9, 11, 11, 12, 13

Which of the following statements is true?

- Ⓐ For both sets of data, the median is equal to the mean.
- Ⓑ The ages of Sierra's cousins are more spread out than those of Alek's cousins.
- Ⓒ The mean age of Sierra's cousins is greater than that of Alek's cousins.
- Ⓓ There are no outliers.

25. What is the greatest common factor of 60 and 75?

Ⓐ 3

Ⓑ 6

Ⓒ 15

Ⓓ 25

26. Carrie can fold 20 shirts in two and a half minutes. If she continues at this rate, how long will it take her to fold 50 shirts?

Ⓐ 8.75 minutes

Ⓑ 5.25 minutes

Ⓒ 8.00 minutes

Ⓓ 6.25 minutes

27. If skim milk is 87% water, how many cups of skim milk contain 3.58 cups of water? Round your answer to the nearest hundredth.

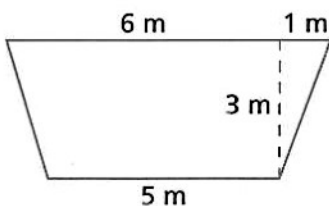Ⓐ 0.87 cup   Ⓒ 3.58 cups

Ⓑ 3.11 cups   Ⓓ 4.11 cups

28. Isa finished 30% of his homework in 27 minutes. How many more minutes will it take Isa to complete his homework, assuming that he works at the same pace?

Ⓐ 63 minutes

Ⓑ 67 minutes

Ⓒ 70 minutes

Ⓓ 90 minutes

29. Bella is wrapping a cube-shaped gift box that measures 8.5 inches along each edge. How many square inches of wrapping paper is needed to cover the box completely without overlapping?

Ⓐ 34 in.^{2}

Ⓑ 72.25 in.^{2}

Ⓒ 433.5 in.^{2}

Ⓓ 614.125 in.^{2}

30. What is the area of this trapezoid?

Ⓐ 14 m^2

Ⓑ 18 m^2

Ⓒ 21 m^2

Ⓓ 35 m^2

31. Which of the following is a statistical question?

Ⓐ What state were you born in?

Ⓑ How tall is Ms. Lin?

Ⓒ What are the ages of the students in your class?

Ⓓ What is the formula for the circumference of a circle?

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32. Solve the equation below for x.
$$3.25x = 8.125$$

Ⓐ $x = 0.025$

Ⓑ $x = 0.25$

Ⓒ $x = 2.5$

Ⓓ $x = 25$

---

33. Which pair of expressions is equivalent?

Ⓐ $15a + 6$ and $3(5a + 3)$

Ⓑ $14b + 4$ and $2(7b - 2)$

Ⓒ $5(2c + 3)$ and $7c + 8$

Ⓓ $3\left(d + \frac{5}{3}\right)$ and $3d + 5$

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34. A recipe calls for 3 avocados for each bowl of guacamole. How many full bowls of guacamole can be made with 17 avocados?

Ⓐ 3 bowls

Ⓑ 5 bowls

Ⓒ 6 bowls

Ⓓ 14 bowls

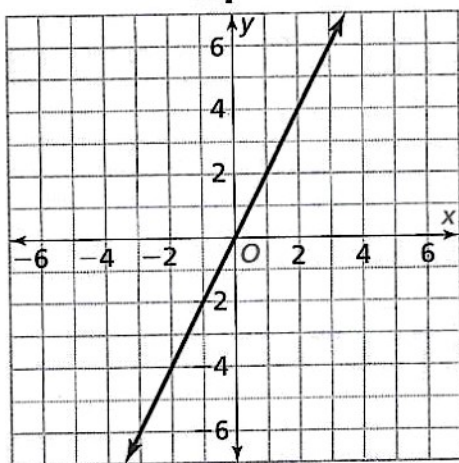**35.** Which coordinate pair represents the reflection of $(-4, 6)$ across the x-axis?

Ⓐ $(4, -6)$

Ⓑ $(-4, 6)$

Ⓒ $(-4, -6)$

Ⓓ $(4, 6)$

---

36. Which of the following can be represented by the equation $y = 2x$?

Table A

x	y
2	3
4	6
6	9

Graph B

Ⓐ Table A only

Ⓑ Graph B only

Ⓒ Table A and Graph B

Ⓓ Neither Table A nor Graph B

37. Solve the equation $4(0.2x - 5) = 12$.

   (A) $x = -10$

   (B) $x = 4$

   (C) $x = 13.75$

   (D) $x = 40$

38. Rayhana has a coupon for 15% off a single item at a store. If the item has a regular price of p dollars, then the sale price can be represented by $p - 0.15p$. Which expression is equivalent?

   (A) $0.85p$

   (B) $0.65p$

   (C) $0.15p$

   (D) $-0.15p$

39. Samuel is deep-sea diving. He dives down 735 feet from the surface of the water, and then rises back up 418 feet. He then dives down another 271 feet. How far from the surface is he now?

   (A) $-1{,}424$ feet

   (B) -588 feet

   (C) 46 feet

   (D) 882 feet

40. The world record for the greatest temperature range recorded in one day occurred in Browning, Montana, in 1916. The temperature fell from 44°F to $-56°F$. What was the temperature change that day?

   (A) $-100°F$

   (B) $-12°F$

   (C) 12°F

   (D) 100°F