

1. The lists show daily sales (\$). Which group's data vary more? Store A: 2, 5, 11, 13, 17, 19 Store B: 15, 18, 18, 18, 20, 23, 24, 25 A) Store A, because its range is 17 B) They vary the same amount C) Store B, because its median is higher D) Store B, because its range is 10	2. Two angles are supplementary. One measures 67°. What is the measure of the other? A) 23° B) 67° C) 113° D) 293°	3. A coat costs \$144, and a coupon takes 25% off. Then 15% tax is added. What is the final amount? <i>Calculator</i> A) \$108 B) \$124.20 C) \$129.60 D) \$144
4. In a random sample of fish from a lake, 15% are trout. The lake has 2,600 fish. About how many trout are in the lake? <i>Calculator</i> A) 15 B) 390 C) 2,210 D) 39,000	5. A plane cuts a sphere through its center. What is the shape of the cross section? A) Rectangle B) Square C) Circle D) Triangle	6. A spinner has 10 equal sections, one of them red. It landed on red 7 times in 20 spins. Which probability of red is greater, and by how much? A) Theoretical, by $\frac{1}{4}$ B) Experimental, by $\frac{1}{4}$ C) Experimental, by $\frac{1}{2}$ D) They are equal
7. A circle has a radius of 14 cm. What is its circumference? Use 3.14 for π. <i>Calculator</i>	8. Which decimal is equal to this fraction? $\frac{1}{8}$	9. Two lines cross. A pair of vertical angles measure $(4x + 25)^\circ$ and $(2x + 41)^\circ$. What is the value of x? A) 8 B) 11 C) 19 D) 57

10. A card is picked from cards numbered 1 to 10 and put back, 100 times. How many times do you expect it is a 7?

A) 10
B) 13
C) 50
D) 90

11. Solve for x.
 $-3.5x = -28$

12. Avery made 35 of 40 shots. If Avery takes 200 more shots, about how many will go in?

A) 25
B) 35
C) 175
D) 210

13. Alex pays \$5 to get into a zoo and buys animal feed cups for \$3.50 each. Alex spends \$29.50 in all.

Which equation finds x, the number of feed cups?

A) $5 + 3.5x = 29.5$
B) $5x + 3.5x = 29.5$
C) $3.5x - 5 = 29.5$
D) $3.5 + 5x = 29.5$

14. 4.4 pounds of cheese cost \$11. What is the price for each pound?

A) \$0.40
B) \$2.50
C) \$6.60
D) \$48.40

15. A leaky faucet drips 3 cups of water each hour. How many cups does it drip in 7 days? *Calculator*

16. How many real solutions does each equation have? Write each one in the correct box.

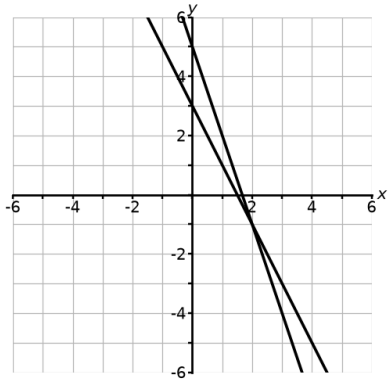
$x^2 = 0$
 $x^2 = 4$
 $x^3 = -27$
 $x^2 = -10$

Two solutions	One solution	No solution

17. Which relations are functions? Select all that apply.

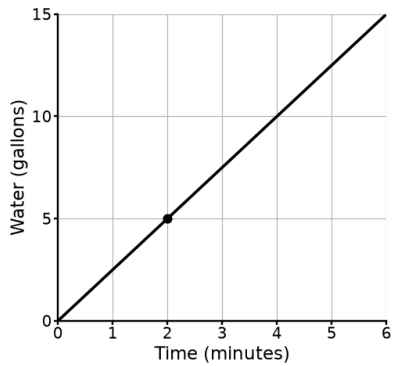
☐ A) $\{(-1, -4), (4, -4), (9, 5), (2, 11)\}$
☐ B) $\{(-2, -2), (-2, 10), (7, -2), (4, 12)\}$
☐ C) $\{(4, 1), (1, -4), (4, 0), (6, 4)\}$
☐ D) $\{(2, 5), (2, 12), (-4, 11), (7, 7)\}$
☐ E) $\{(1, 6), (0, 12), (-2, 6), (-1, 3)\}$

18. The graph shows a system of two equations. What is its solution?



- A) (0, 3)
B) (2, -1)
C) (-1, 2)
D) (3, -3)

19. The graph shows the water a pump moves over time. What is the unit rate, in gallons per minute?



- A) 0.4
- B) 2
- C) 2.5
- D) 5

20. The table shows the fare y, in dollars, for a taxi ride of x miles. The pattern is linear. What is the value of y when x = 0?

Distance (miles)	Fare (\$)
3	59
4	71
5	83
6	95

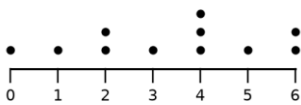
- A) 12
- B) 23
- C) 59
- D) 95

21. The table shows the words a typist types over time. What is the unit rate, in words per minute?

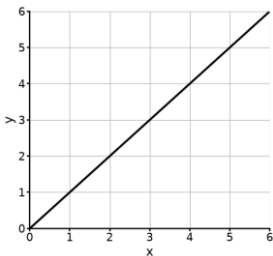
Time (minutes)	Words typed
2	6
5	15
8	24
11	33

- A) $\frac{1}{3}$
- B) 3
- C) 6
- D) 9

22. The dot plot shows how many pencils each student has. How many students are shown in the dot plot?



23. Does the graph show a proportional relationship?



- A) No. The graph is not a straight line.
- B) Yes. The graph goes up from left to right.
- C) Yes. It is a straight line through (0, 0).
- D) No. The line does not go through (0, 0).

24. A leaky faucet drips 30 cups of water in 3 hours.

Part A: Write an equation for y, the cups dripped in x hours.

Part B: How many cups is that in 23 hours?

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Answer Key

1. A) Store A, because its range is 17	2. C) 113°	3. B) \$124.20
4. B) 390	5. C) Circle	6. B) Experimental, by $\frac{1}{4}$
7. 87.92 cm	8. 0.125	9. A) 8
10. A) 10	11. 8	12. C) 175
13. A) $5 + 3.5x = 29.5$	14. B) \$2.50	15. 504
16. Two solutions: $x^2 = 4$; One solution: $x^2 = 0$, $x^3 = -27$; No solution: $x^2 = -10$	17. A) $\{(-1, -4), (4, -4), (9, 5), (2, 11)\}$, E) $\{(1, 6), (0, 12), (-2, 6), (-1, 3)\}$	18. B) (2, -1)
19. C) 2.5	20. B) 23	21. B) 3
22. 11	23. C) Yes. It is a straight line through (0, 0).	24. Part A: $y = 10x$; Part B: 230 cups