

Algebra I TnReady Quiz

1

A hot air balloon starts descending after reaching a height of 500 feet. The table shows the height in feet, $f(t)$, of the hot air balloon after t seconds.

Height of Hot Air Balloon

Time, t (in seconds)	Height $f(t)$ (in feet)
1	486
2	472
3	458
4	444
5	430

Which function best describes the height, $f(t)$, of the hot air balloon after t seconds?

- ☐ A $f(t) = 486 - 14t$
- ☐ B $f(t) = 14t - 486$
- ☐ C $f(t) = 500 - 14t$
- ☐ D $f(t) = 14t - 500$

2

The first two terms in a sequence are 10 and 13. The sequence follows the rule $f(x) = 3x + 7$, where x represents the position of the term in the sequence. Which list represents the next five terms in the sequence?

- ☐ A 16, 19, 22, 25, 28
- ☐ B 16, 23, 26, 33, 36
- ☐ C 20, 23, 30, 33, 40
- ☐ D 20, 27, 34, 41, 48

3

The table shows Xavier's earnings, $f(x)$, after working x number of hours.

Xavier's Earnings

Number of Hours, x	Earnings, $f(x)$
1	\$10
2	\$18
3	\$26
4	\$34
5	\$42

Which function best describes Xavier's earnings?

- ☐ A $f(x) = 8x$
- ☐ B $f(x) = x + 2$
- ☐ C $f(x) = 8x + 2$
- ☐ D $f(x) = 2x + 8$

4	<p>At a state fair, Hannah pays \$10.00 for the admission fee, \$5.00 for parking, and \$2 for each ride. Which equation relates the relationship between the total amount Hannah spent, d, in dollars and the number of rides, r?</p> <p> <input type="radio"/> A $d = 2r + 5$ <input type="radio"/> B $d = 2r + 15$ <input type="radio"/> C $d = 10r + 7$ <input type="radio"/> D $d = 15r + 2$ </p>
5	<p>An empty crate used to ship watermelons weighs 35 pounds. The average weight of a watermelon is about 18 pounds. Which equation can be used to find the number of watermelons, n, in a crate that weighs 143 pounds?</p> <p> <input type="radio"/> A $143 = 18n - 35$ <input type="radio"/> B $143 = 18n + 35$ <input type="radio"/> C $143 = 35n + 18$ <input type="radio"/> D $143 = (18 + 35)n$ </p>
6	<p>Evaluate $\frac{2}{3}xy - x^2y$ for $x = -3$ and $y = -4$.</p> <p> <input type="radio"/> A -44 <input type="radio"/> B -28 <input type="radio"/> C 28 <input type="radio"/> D 44 </p>
7	<p>April bought two pairs of jeans for \$42 each and two T-shirts for \$14 each. She calculated the total amount by multiplying 2 by \$56, while the bill showed the total amount as \$84 plus \$28. Which property can be used to justify that these two amounts are the same?</p> <p> <input type="radio"/> A associative property <input type="radio"/> B distributive property <input type="radio"/> C addition property of equality <input type="radio"/> D multiplication property of equality </p>
8	<p>Simplify: $3x(x + 2y) + 4(6 - xy)$</p> <p> <input type="radio"/> A $3x^2 + 2xy + 24$ <input type="radio"/> B $3x + 2xy + 24$ <input type="radio"/> C $3x^2 - xy + 2y + 24$ <input type="radio"/> D $3x - xy + 2y + 24$ </p>

9

The equation $C = 0.1t + 40$ represents the total amount charged by a cell phone company. Which table shows the relationship between the total charge, C , and the number of text messages, t ?

☐ A

Number of Text Messages, t	Total Charge, C
5	\$45.10
10	\$50.10
15	\$55.10

☐ C

Number of Text Messages, t	Total Charge, C
5	\$40.50
10	\$41.00
15	\$41.50

☐ B

Number of Text Messages, t	Total Charge, C
5	\$45.00
10	\$50.00
15	\$55.00

☐ D

Number of Text Messages, t	Total Charge, C
5	\$40.05
10	\$40.10
15	\$40.15

10

Sheila can purchase books from a reading club for \$5 per book after depositing an initial amount of \$36 into the reading club account. Which table shows the total amount she will spend to purchase n number of books?

☐ A

Number of Books, n	Amount Spent (dollars)
42	210
45	225
55	275
60	300

☐ C

Number of Books, n	Amount Spent (dollars)
12	437
15	545
23	833
25	905

☐ B

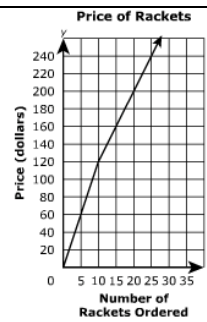
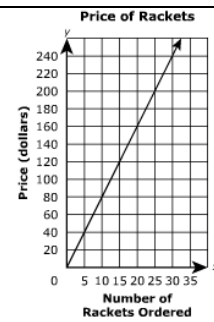
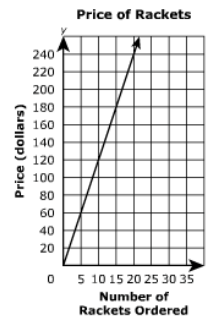
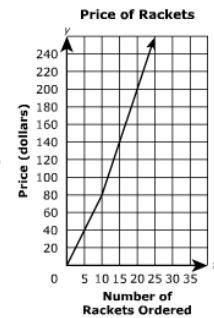
Number of Books, n	Amount Spent (dollars)
12	96
15	111
23	151
25	161

☐ D

Number of Books, n	Amount Spent (dollars)
42	174
45	189
55	239
60	264

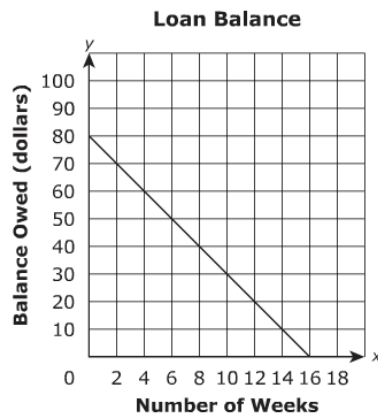
11

The manager of a sports store ordered tennis rackets from a company. For the first 10 tennis rackets ordered, the price is \$12 per tennis racket. The price of additional rackets is \$8 per tennis racket. Which graph can be used to determine the amount the manager will need to pay for the tennis rackets ordered?

☐ A

☐ C

☐ B

☐ D


12

Ralph borrowed \$80 from his sister. To repay the loan, he pays her weekly. The graph below models the balance, y , he owes after x weeks of payments.



Which equation best represents the relationship between the balance owed and the number of weeks?

☐ A $y = 80 - 10x$

☐ B $y = 80 - 5x$

☐ C $y = 80 + 5x$

☐ D $y = 80 + 10x$

13

The table shows the amounts three students spent on wire for a science project.

Wire Cost

Student	Length of the Wire, w (feet)	Cost, c
Terrance	3	\$8.55
Jimmy	5	\$14.25
Vanessa	6	\$17.10

Which equation represents the relationship between the cost, c , and the length of the wire, w ?

☐ A $c = 11.4w$

☐ B $c = 8.55w$

☐ C $c = 5.7w$

☐ D $c = 2.85w$

14	<p>Which scenario <u>best</u> represents the equation $y = 1.5x + 15$?</p> <ul style="list-style-type: none"> <input type="radio"/> A the profit from selling x glasses of lemonade for \$1.50 per glass at a fair, if the booth rental is \$15 <input type="radio"/> B the total cost to rent skis for x hours at \$1.50 per hour, including an initial deposit amount of \$15 <input type="radio"/> C the amount of gasoline left in a car after traveling x minutes, if it initially had 15 gallons of gasoline and used 1.5 gallons per minute <input type="radio"/> D distance covered by a biker after traveling x hours at a constant speed of 15 miles per hour and then traveling 1.5 miles at a different speed
15	<p>If the slope of the line $y = -4x + 1$ is multiplied by 4, what will happen to its graph?</p> <ul style="list-style-type: none"> <input type="radio"/> A The line will shift up 4 units. <input type="radio"/> B The line will shift down 4 units. <input type="radio"/> C The line will become 4 times as steep. <input type="radio"/> D The line will become $\frac{1}{4}$ as steep.
16	<p>A line is represented by the equation $y = 6x + b$, where b is a positive number. How will the graph change if the value of b is increased by 3 units?</p> <ul style="list-style-type: none"> <input type="radio"/> A The line will shift to the right 3 units. <input type="radio"/> B The line will shift to the left 3 units. <input type="radio"/> C The line will shift down 3 units. <input type="radio"/> D The line will shift up 3 units.
17	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>The graph shows the altitude, h, in feet, of a mountain climber after t hours.</p> <div style="text-align: center;"> <p>Altitude of a Mountain Climber</p> </div> </div> <div style="width: 35%;"> <p>What is the mountain climber's average climbing rate?</p> <ul style="list-style-type: none"> <input type="radio"/> A 75 feet per hour <input type="radio"/> B 150 feet per hour <input type="radio"/> C 250 feet per hour <input type="radio"/> D 300 feet per hour </div> </div>

18

Ryan bicycled 100 miles from his home. The table shows his distance, in miles, from home at different times.

Ryan's Distance from Home

Time (hours)	Distance (miles)
1.5	30
2	40
2.5	50
3	60

What was Ryan's average speed?

- ☐ **A** 5 miles per hour
- ☐ **B** 10 miles per hour
- ☐ **C** 20 miles per hour
- ☐ **D** 25 miles per hour

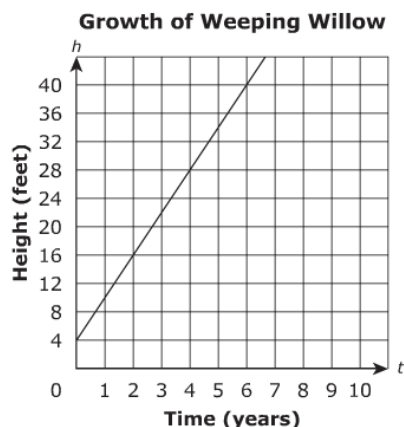
19

The total amount a daycare charges is represented by the equation $y = 175x + 50$, where y represents the total charge for x weeks. What does the slope represent in this situation?

- ☐ **A** the weekly charge
- ☐ **B** the total charge
- ☐ **C** the registration fee
- ☐ **D** the number of weeks

20

Lisa planted a weeping willow tree. The graph shows the height, h , of the tree over a period of t years.



According to the graph, what is the tree's growth rate?

- ☐ **A** 4 feet per year
- ☐ **B** 6 feet per year
- ☐ **C** 8 feet per year
- ☐ **D** 12 feet per year