1)

Look at the radical.

$$-8\sqrt{726}$$

What is a rewritten form of the radical?

A. $-88\sqrt{6}$
B. -90.75
C. $-986\sqrt{6}$
D. $-2{,}904$

---

2)

Look at the expression.

$$2\sqrt{8} \bullet \sqrt{20}$$

Which of these is equivalent to this expression?

A. $2\sqrt{28}$
B. 5
C. $8\sqrt{10}$
D. $32\sqrt{10}$

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3)

Which sum is rational?

A. $\pi + 18$
B. $\sqrt{25} + 1.75$
C. $\sqrt{3} + 5.5$
D. $\pi + \sqrt{2}$

---

4)

Which product is irrational?

A. $\sqrt{2} \bullet \sqrt{50}$
B. $\sqrt{64} \bullet \sqrt{4}$
C. $\sqrt{9} \bullet \sqrt{49}$
D. $\sqrt{10} \bullet \sqrt{8}$

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5)

A rectangle has a length of 12 meters and a width of 400 centimeters. What is the perimeter, in cm, of the rectangle?

A. 824 cm
B. 1,600 cm
C. 2,000 cm
D. 3,200 cm

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6)

Jill swam 200 meters in 2 minutes 42 seconds. If each lap is 50 meters long, which is MOST LIKELY to be her time, in seconds, per lap?

A. 32 seconds
B. 40 seconds
C. 48 seconds
D. 60 seconds

---

7)

In which expression is the coefficient of term "n" – 1?

A. $3n^2 + 4n - 1$
B. $-n^2 + 5n + 4$
C. $-2n^2 - n + 5$
D. $4n^2 + n - 5$

---

8)

The expression s^2 is used to calculate the area of a square, where s is the side length of the square. What does the expression $(8x)^2$ represent?

A. the area of a square with a side length of 8
B. the area of a square with a side length of 16
C. the area of a square with a side length of $4x$
D. the area of a square with a side length of $8x$

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9)

What is the product of $7x - 4$ and $8x + 5$?

A. $15x + 1$
B. $30x + 2$
C. $56x^2 + 3x - 20$
D. $56x^2 - 3x + 20$

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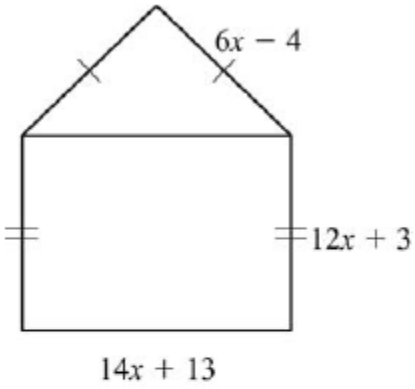
10)

A model of a house is shown.



What is the perimeter, in units, of the model?

A. $32x + 12$ units
B. $46x + 25$ units
C. $50x + 11$ units
D. $64x + 24$ units

---

11)

Which expression has the same value as the expression $(8x^2 + 2x - 6) - (5x^2 - 3x + 2)$?

A. $3x^2 - x - 4$
B. $3x^2 + 5x - 8$
C. $13x^2 - x - 8$
D. $13x^2 - 5x - 4$

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12)

When Justin goes to work, he drives at an average speed of 65 miles per hour. It takes about 1 hour and 30 minutes for Justin to arrive at work. His car travels about 25 miles per gallon of gas. If gas costs $3.65 per gallon, how much money does Justin spend on gas to travel to work? *

13)

How many terms are in the expression $36x^3 + 27x^2 - 18x - 9$?

a. 3

b. 7

c. 4

d. 9

14)

What are the term(s), coefficient, and constant described by the phrase, "the cost of 4 tickets to the football game, t, and a service charge of $10"?

a. term: $4t$, coefficient: 4, constant: 10

b. terms: $4t$ and 10, coefficient: 10, constant: 4

c. term: $14t$, coefficient: 14, constant: none

d. terms: $4t$ and 10, coefficient: 4, constant: 10

15)

Newer books can be downloaded for $8 each, while older books can be downloaded for $4 each. The total cost, in dollars, of 12 books is represented by the expression $8n + 4(12 - n)$, where n represents the number of new books downloaded. How does changing the value of n change the value of the term $4(12 - n)$?

a. For values of n less than 12, the term $4(12 - n)$ will be negative; for values of n greater than 12, the term will be positive; for values of n equal to 12, the term will equal 0.

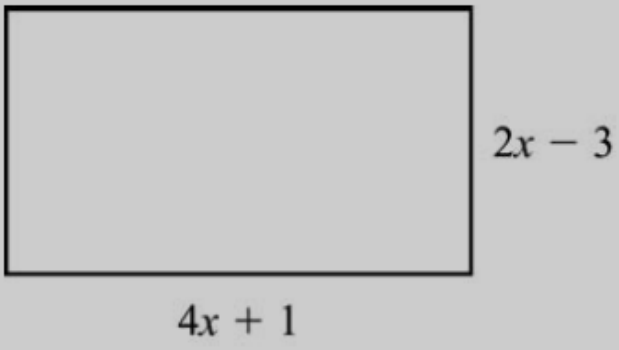
b. For values of n less than 12, the term $4(12 - n)$ will be positive; for values of n greater than 12, the term will be positive; for values of n equal to 12, the term will equal 0.

c. For values of n less than 12, the term $4(12 - n)$ will be positive; for values of n greater than 12, the term will be negative; for values of n equal to 12, the term will equal 0.

d. For values of n less than 12, the term $4(12 - n)$ will be negative; for values of n greater than 12, the term will be negative; for values of n equal to 12, the term will equal 0.

16)

The dimensions of a patio, in feet, are shown below.



What is the area of the patio, in square feet?

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17)

Your cell phone company charges $29.99 a month plus $0.25 for each text message sent. You have budgeted no more than $35.00 for cell phone service each month. Given this situation, determine the minimum and maximum number of texts you can send without going over budget. Let x represent the number of texts.

a. $x < 20.04$

b. $x \geq 0$ and $x \leq 20.04$

c. $x > 0$ and $x < 20$

d. $x \geq 0$ and $x \leq 20$

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18)

You have no more than $60 to spend. You want a drink that costs $1.50 including tax, and you want to buy a pair of pants, which will have 4% sales tax. What is the inequality that represents the amount of money you have to spend?

a. $x + 0.04x + 1.50 > 60$

b. $x + 0.04x + 1.50 \geq 60$

c. $x + 0.04x + 1.50 < 60$

d. $x + 0.04x + 1.50 \leq 60$

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19)

A store has a display with pencils that are for sale. The owner typically sells 6 pencils a day. The display holds 50 pencils. The owner insists that there be no fewer than 32 pencils in the display. When should the owner restock the display?

a. in more than 3 days

b. in less than 3 days

c. in 3 days or less

d. in 3 days or more

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20)

Your doctor told you to eat at least 70 milligrams of vitamin C each day. One tomato contains 16 milligrams of vitamin C, while one potato contains 17 milligrams. Determine which system of inequalities represents the number of tomatoes and potatoes you must eat in order to reach your minimum recommended amount of vitamin C.

a. $\begin{cases} 16x+17y \le 70 \\ x \le 0 \\ y \le 0 \end{cases}$

c. $\begin{cases} 16x+17y \ge 70 \\ x \ge 0 \\ y \ge 0 \end{cases}$

b. $\begin{cases} 16x+17y \le 70 \\ x \ge 0 \\ y \ge 0 \end{cases}$

d. $\begin{cases} 16x+17y \ge 70 \\ x \le 0 \\ y \le 0 \end{cases}$

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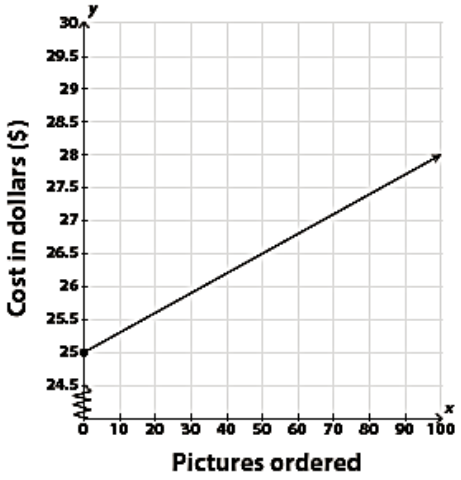
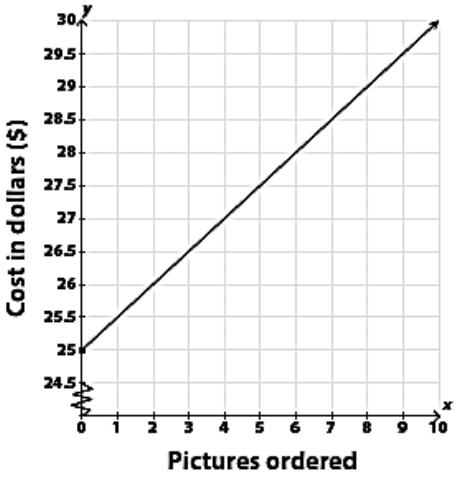
21)

A photo service charges $25.00 a year as well as $0.05 for each photo ordered. Which graph models the total cost of ordering photos?

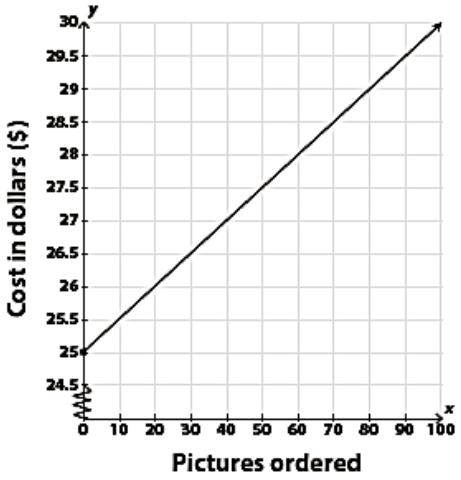
a.



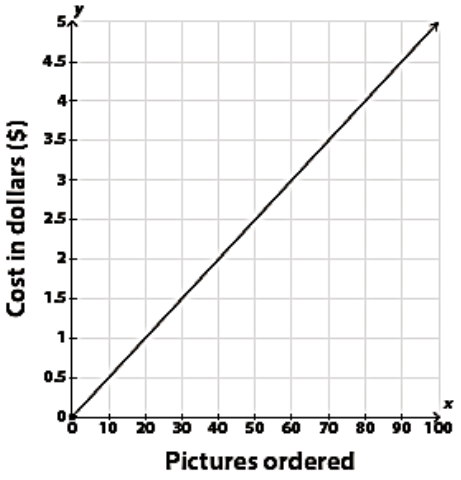
c.



b.



d.



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22)

Min-Ji injured her elbow during a varsity volleyball game. Her doctor has recommended physical therapy several times a week. Min-Ji's parents want to plan for the potential cost of therapy over the course of a month. They pay $160 a month for insurance and then another $20 fee each time Min-Ji goes to physical therapy.

a. What equation models the total fees for physical therapy?

b. What does the graph of the equation look like? Graph the equation below. Be sure to label the axes.