

warm up: KEYSTONE: #25 and 26

- (25) A pizza restaurant charges for each pizza and adds a delivery fee. The cost (c), in dollars, to have any number of pizzas (p) delivered to a home is described by the function $c = 8p + 3$. Which statement is true?

- ☒ A. The cost of 8 pizzas is \$11.
- ☒ B. The cost of 3 pizzas is \$14.
- ☒ C. Each pizza costs \$8, and the delivery fee is \$3.
- ☐ D. Each pizza costs \$3, and the delivery fee is \$8.

$$c = 8p + 3$$

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$$c = 8(8) + 3 = 67$$

- Jeff's restaurant sells hamburgers. The amount charged for a hamburger (h) is based on the cost for a plain hamburger plus an additional charge for each topping (t) as shown in the equation below.

$$h = 0.60t + 5$$

What does the number 0.60 represent in the equation?

- ☐ A. the number of toppings
- ☐ B. the cost of a plain hamburger
- ☒ C. the additional cost for each topping
- ☐ D. the cost of a hamburger with 1 topping

Francisco purchased x hot dogs and y hamburgers at a baseball game. He spent a total of \$10. The equation below describes the relationship between the number of hot dogs and the number of hamburgers purchased.

$$3x + 4y = 10$$

The ordered pair (2, 1) is a solution of the equation. What does the solution (2, 1) represent?

- A. Hamburgers cost 2 times as much as hot dogs.
 B. Francisco purchased 2 hot dogs and 1 hamburger.
 C. Hot dogs cost \$2 each, and hamburgers cost \$1 each.
 D. Francisco spent \$2 on hot dogs and \$1 on hamburgers.

$$3(2) + 4(1) = 10$$

(13)

Samantha and Maria purchased flowers. Samantha purchased 5 roses for x dollars each and 4 daisies for y dollars each and spent \$32 on the flowers. Maria purchased 1 rose for x dollars and 6 daisies for y dollars each and spent \$22. The system of equations shown below represents this situation.

Sam: $5x + 4y = 32$ $x = \text{cost of rose}$
 Maria: $x + 6y = 22$ $y = \text{cost of daisy}$

Which statement is true?

- A. A rose costs \$1 more than a daisy.
 B. Samantha spent \$4 on each daisy.
 C. Samantha spent more on daisies than she did on roses.
 D. Samantha spent over 4 times as much on daisies as she did on roses.

Sam: $5x + 4y = 32$ $x = \text{rose}$
 Maria: $x + 6y = 22$ $y = \text{daisy}$

Subs

$$\begin{aligned} 5(22 - 6y) + 4y &= 32 \\ 110 - 30y + 4y &= 32 \\ 110 - 26y &= 32 \\ -26y &= -78 \\ y &= 3 \\ x &= 22 - 6(3) = 4 \end{aligned}$$

$$\begin{aligned} 5x + 4y &= 32 \\ -5(x + 6y) &= -22 \end{aligned}$$

$$\begin{aligned} 5x + 4y &= 32 \\ -5x - 30y &= -110 \end{aligned}$$

$$\begin{aligned} -26y &= -78 \\ y &= 3 \end{aligned}$$

answers page 3

$$1) \frac{\frac{1}{16b^4}}{\frac{32b^4}{2}} = \left(\frac{1}{2b^2} \right)$$

$$2) \frac{s^2 - 5s - 36}{s - 9} = \frac{(s-9)(s+4)}{s-9} = (s+4)$$

$$6) \frac{48k^2 + 24k - 24}{12k^2 + 6k - 6} = \frac{24(2k^2 + k - 1)}{6(2k^2 + k - 1)} = 4$$

$$24(2k+1)(k-1) / 6(2k+1)(k-1)$$

$$7) \frac{\frac{1}{24q^4}}{\frac{48q^4}{2}} = \left(\frac{1q^2}{2} \right)$$

$$3) \frac{d^2 - 4d - 21}{d + 3} = \frac{\cancel{(d+3)}(d-7)}{\cancel{d+3}} = \boxed{d-7}$$

$$8) \frac{p-8}{4p-32} = \frac{\cancel{p-8}}{4\cancel{(p-8)}} = \boxed{\frac{1}{4}}$$

$$4) \frac{r-7}{r^2 - r - 42} = \frac{\cancel{r-7}}{(\cancel{r-7})(r+6)} = \boxed{\frac{1}{r+6}}$$

$$9) \frac{c^2 - 6c - 16}{c^2 - 3c - 10} = \frac{\cancel{(c-8)}(c+2)}{\cancel{(c-5)}(c+2)} = \boxed{\frac{c-8}{c-5}}$$

$$5) \frac{6y - 24}{y - 4} = \frac{\cancel{6(y-4)}}{\cancel{y-4}} = \boxed{6}$$

$$10) \frac{21h^2 - 10h - 24}{18h^2 - 51h + 36}$$

(10)

$$\begin{array}{l}
 \rightarrow 21h^2 - 10h - 24 \\
 M \quad h^2 - 10h - 504 \\
 U \quad (h + \frac{18}{21})(h - \frac{28}{21}) \\
 D \\
 S \quad (h + \frac{6}{7})(h - \frac{4}{3}) \\
 S \quad (7h + 6)(3h - 4)
 \end{array}$$

$$\begin{array}{r}
 -504 \\
 18 \quad -28 \\
 \hline
 -10
 \end{array}$$

$$\frac{21h^2 - 10h - 24}{18h^2 - 51h + 36} = \frac{(7h+6)(3h-4)}{3(6h^2 - 17h + 12)} = \frac{(7h+6)(3h-4)}{3(3h-4)(2h-3)} = \frac{7h+6}{3(2h-3)}$$

$$\begin{array}{l}
 \downarrow \\
 (6h^2 - 17h + 12) \\
 M \quad h^2 - 17h + 72 \\
 U \quad (h - \frac{8}{6})(h - \frac{9}{6}) \\
 D \\
 S \quad (h - \frac{4}{3})(h - \frac{3}{2}) \\
 S \quad (3h - 4)(2h - 3)
 \end{array}$$

$$\begin{array}{r}
 72 \\
 -8 \quad -9 \\
 \hline
 -17
 \end{array}$$

Ahava is traveling on a train.

The train is going at a constant speed of 80 miles per hour.

A. How many hours will it take for the train to travel 1,120 miles?

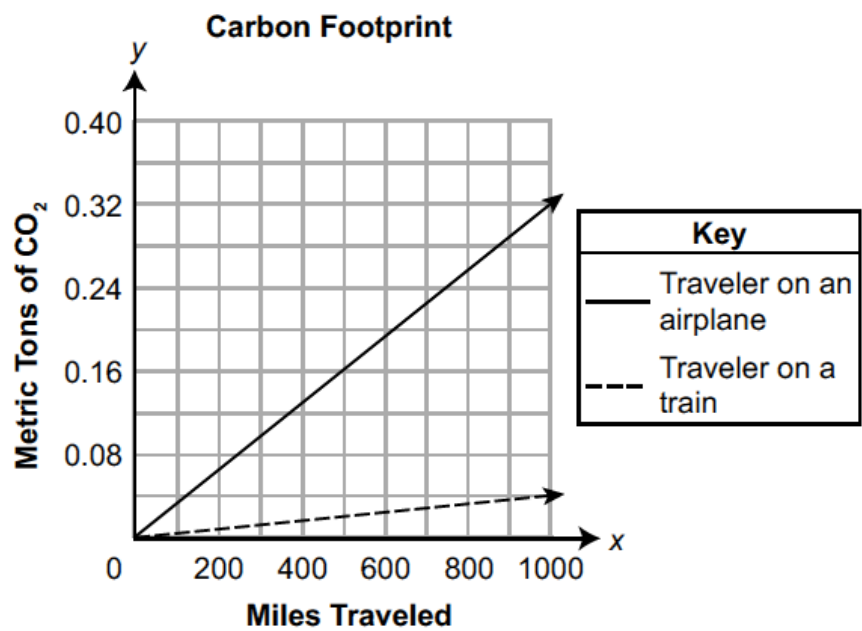
hours: _____

Ahava also considered taking an airplane. The airplane can travel the same 1,120 miles in 12 hours less time than it takes the train.

B. What is the speed of the airplane in miles per hour (mph)?

speed of the airplane: _____ mph

Ahava is very concerned about the environment. The graph below displays the carbon dioxide (CO_2), in metric tons, for each traveler on an airplane and each traveler on a train.



- C. What equation could be used to find the metric tons of CO_2 produced (y) by a traveler on an airplane for x miles traveled?

equation: _____

