Coordinate Algebra NAME Key

MILESTONE REVIEW—Coach Book--Unit 1 Review

1. A cupcake shop sells an average of 14 dozen cupcakes a day to about 50 customers. What is their average sales rate, in cupcakes per customer?

14 doz = 168 cupcakes

$\frac{168 \text{ cupcakes}}{50 \text{ customers}} = \frac{3.36 \text{ cupcakes}}{\text{customer}}$

2. Which is equivalent to 21.76 grams per minute? (1kg = 1000 grams)

a) 1.306 kg per hour b) 13.06 kg per hour
c) 36.267 kg per hour d) 362.67 kg per hour

$\frac{21.76 \text{ g}}{1 \text{ min}} \cdot \frac{1 \text{ kg}}{1000 \text{ g}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = \frac{1305.6 \text{ kg}}{1000 \text{ hour}}$

$= \frac{1.3056 \text{ kg}}{\text{hr}}$

3. In the expression 7x - 9, the variable is X.
4. In the expression $3^y + 12$, the constant term is 12.
5. In the expression 90 +5z, the coefficient is 5.
6. In the equation t = 0.7n - 1.3, the dependent variable is t.

A plumber charges a flat fee for each job, plus an hourly rate for the number of hours the job takes to complete. The total cost of the job, in dollars, can be modeled by the equation y = 50 +65x.

7. What is the independent variable in the equation represent in this situation?

dep. indep.
flat fee cost per hr

a) the number of jobs, y
b) the number of hours to complete the job, x
c) the cost per hour, $65
d) the total cost for the job, y

8. What does the coefficient in the expression represent in this situation?

a) the number of hours to complete the job, x
b) the cost per hour, $65
c) the flat fee, $65
d) the flat fee, $50

9. A colony of bacteria doubles in number every hour, the expression $250\ (2)^h$ gives the number of bacteria after h hours. What does the constant 250 represent?

250 would be the amount of bacteria you began with

10. The number of cells in a sample doubles every minute. A doctor started with a sample of 25 cells and predicted that, after 5 minutes, he would have 32 cells. Is his prediction accurate? Explain why or why not.

$25(2)^5$ is much bigger than 32

Choose the best answer.

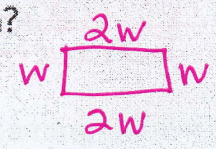
11. A rectangle's length is twice its width. Its perimeter is 156 meters. What is the rectangle's length?

A. 13 m

B. 26 m

C. 52 m

D. 54 m



$w+2w+w+2w=156$

$6w=156$

$w=26$

$L=2(26)=52$

12. A seamstress is making dresses to sell at a local craft fair. She charges \$35 for each dress and pays a \$75 fee to rent her booth at the fair. The expression $35d - 75$ gives the amount she earns at the fair, where d is the number of dresses sold. Which of the following is **not** true? $d \geq 0$

A. The value of d can be any whole number. True

B. The value of d can be any integer. (not neg. int)

C. The value of d cannot be irrational. True

D. The value of d can be 0. True

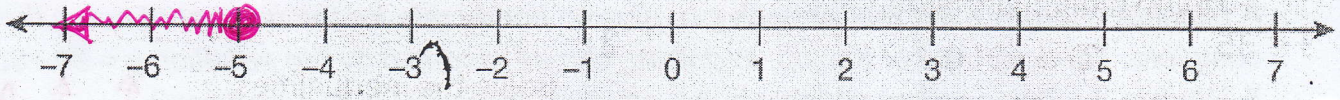
Solve and graph the inequality.

13. $19 - 3t \geq 34$

$-19 \quad -19$

$\frac{-3t}{-3} \geq \frac{15}{-3}$

$t \leq -5$



Choose the best answer.

14. Which of the following is equivalent to the equation $4r + 7s = q$?

A. $r = 4q - 28s$

B. $r = \frac{q - 7s}{4}$

C. $s = 7q + 28r$

D. $s = \frac{q + 4r}{7}$

$\frac{4r}{4} = \frac{q - 7s}{4}$ $\quad r = \frac{q-7s}{4}$

$\frac{7s}{7} = \frac{q - 4r}{7}$ $\quad s = \frac{q-4r}{7}$

15. Which of the following is **not** equivalent to the equation $a - 3b = 5c + 9$

A. $a = 3b + 5c + 9$ ✓

B. $b = \frac{1}{3}(a - 5c - 9)$ ✓

C. $a - 3b - 5c = 9$ ✓

D. $c = \frac{a - 3b + 9}{5}$

$a = 3b + 5c + 9$

$a - 3b - 5c = 9$

$\frac{5c}{5} = \frac{a - 3b - 9}{5}$

$\frac{-3b}{-3} = \frac{-a + 5c + 9}{-3}$

$b = \frac{1}{3}(a - 5c - 9)$

16. At a baseball game, hot dogs cost \$2.25 and sodas cost \$1.75. The total cost, t, for h hot dogs and s sodas can be described by the equation $t = 2.25h + 1.75s$.

If Costas spent \$18.25 and bought 5 hot dogs, how many sodas did he buy?

$t = 2.25h + 1.75s$

$18.25 = 2.25(5) + 1.75s$

$18.25 = 11.25 + 1.75s$

$7 = 1.75s$

$s = 4$