

Name

Key

Directions

You may not look at your notes (or someone else's paper!) while taking this quiz. You may not use a calculator while taking this quiz.

Make sure that you write your solutions using the format discussed and illustrated during class. You should show your scratch work, but do it off to the side and box it off. Do not put any part of your actual solution in a box or circle.

1. Evaluate the expression $4x - 3y$ when $x = 7$ and $y = 5$.

$$\begin{aligned}\text{When } x = 7 \text{ and } y = 5, \\ 4x - 3y &= 4(7) - 3(5) \\ &= 28 - 15 \\ &= 13\end{aligned}$$

2. Write an expression or equation (as appropriate) that models each of the following. In each case, use x as your variable.

- a. one less than the product of 12 and a number

$$12x - 1$$

- b. Five times a number is equal to 24 decreased by the number.

$$5x = 24 - x$$

3. For each problem, determine whether the given number is a solution to the given equation. To earn credit, you need to show your work; simply writing "yes" or "no" will not earn you credit - you need to show me why the answer is "yes" or "no".

- a. Is 7 a solution to the equation $2(w + 1) = 3(w - 1)$?

$$2(7+1) \stackrel{?}{=} 3(7-1)$$

$$2(8) \stackrel{?}{=} 3(6)$$

$$16 \neq 18$$

7 is not a solution to the equation

- b. Is $1\frac{5}{12}$ a solution to the equation $w - \frac{2}{3} = \frac{3}{4}$?

$$(1\frac{5}{12}) - \frac{2}{3} \stackrel{?}{=} \frac{3}{4}$$

$$\frac{17}{12} - \frac{2}{3} \stackrel{?}{=} \frac{3}{4}$$

$$\frac{17}{12} - \frac{8}{12} \stackrel{?}{=} \frac{3}{4}$$

$$\frac{9}{12} \stackrel{?}{=} \frac{3}{4}$$

$$\frac{3}{4} = \frac{3}{4} \quad \checkmark$$

1 $\frac{5}{12}$ is a solution to the equation.