

Homework Questions

Note Title

1/20/2015

1.6 #79

Evaluate $(x+3y)^2$ for $x=-3$, $y=5$

$$(-3 + 3(5))^2$$

$$= (-3 + 15)^2$$

$$= (12)^2$$

$$= \boxed{144}$$

1.6 #81 Evaluate $b^2 - 4ac$

for $a=1$, $b=-5$, $c=-6$

$$-5^2 - 4(1)(-6)$$

↑
Not correct

Should be:

$$(-5)^2 - 4(1)(-6)$$

$$= 25 + 24 = \boxed{49}$$

✱

Important:

$$-5^2 = -(5)(5) = \boxed{-25}$$

$$(-5)^2 = (-5)(-5) = \boxed{25}$$

1.6 #91 Find $12x - 3$ for $x = \frac{3}{4}$

$$12\left(\frac{3}{4}\right) - 3$$

$$= \frac{36}{4} - 3$$

$$= 9 - 3 = \boxed{6}$$

2.1 #11

$x - 2 = 3x + 1$. Check whether $x = -\frac{3}{2}$ is a solution.

$$-\frac{3}{2} - 2 = 3\left(-\frac{3}{2}\right) + 1$$

$$-\frac{3}{2} - 2\left(\frac{2}{2}\right) = -\frac{9}{2} + 1\left(\frac{2}{2}\right)$$

see next page.

Previous example continued:

$$-\frac{3}{2} - \frac{4}{2} = -\frac{9}{2} + \frac{2}{2}$$

$$-\frac{7}{2} = -\frac{7}{2}$$

Yes, it is a solution

2.1#69

$$5x - \frac{2}{3} = 4x + \frac{4}{3}$$

$$x - \frac{2}{3} = \frac{4}{3}$$

$$x = \frac{4}{3} + \frac{2}{3}$$

$$x = \frac{6}{3}$$

$$x = 2$$

Solution Set: $\{2\}$

Note: These are incorrect notation:

$$\{x=2\}$$

$$(2)$$

$$\{\text{Solution Set is } 2\}$$

$$[2]$$

2.3: Combining Properties (cont'd)

Ex: Solve.

$$-\frac{1}{2}(6-5x) = \frac{2}{3}\left(\frac{3}{4} + 10x\right)$$

$$-\frac{1}{2}(6) - \frac{1}{2}(-5x) = \frac{2}{3}\left(\frac{3}{4}\right) + \frac{2}{3}(10x)$$

$$-\frac{6}{2} + \frac{5}{2}x = \frac{6}{4} + \frac{20}{3}x$$

$$-3 + \frac{5}{2}x = \frac{1}{2} + \frac{20}{3}x$$

cont'd next page

Previous example cont'd: $-3 + \frac{5}{2}x = \frac{1}{2} + \frac{20}{3}x$

$$\frac{5}{2}x - \frac{20}{3}x = \frac{1}{2} + 3$$

$$\frac{5}{2}x \left(\frac{3}{3}\right) - \frac{20}{3}x \left(\frac{2}{2}\right) = \frac{1}{2} + \frac{3}{1} \left(\frac{2}{2}\right)$$

$$\frac{15}{6}x - \frac{40}{6}x = \frac{1}{2} + \frac{6}{2}$$

$$-\frac{25}{6}x = \frac{7}{2}$$

$$\left(-\frac{6}{25}\right)\left(-\frac{25}{6}x\right) = \frac{7}{2} \left(-\frac{6}{25}\right)^3$$

Sol'n Set: $\left\{-\frac{21}{25}\right\}$

$$x = -\frac{21}{25}$$

Ex: Solve. $4(7x-2) = 2(14x-1)$

$$28x - 8 = 28x - 2$$

$-28x$

$-28x$

$$-8 = -2 \quad \text{False for every } x$$

$+2$ $+2$

$$-6 = 0 \quad \text{False! for every } x$$

No Solution

Note:

The solution set is $\emptyset$
(the empty set)

Ex: Solve. $-2(3-x) + 5x = 7x-6$

$$-6 + 2x + 5x = 7x - 6$$

$$-6 + 7x = 7x - 6 \quad \text{True for every } x$$

$$7x - 6 = 7x - 6$$

$\left\{ \right.$

$-7x$

$-7x$

$$-6 = -6$$

$+6$

$+6$

$$\text{True for every } x$$

$$0 = 0 \quad \text{True for every } x$$

Sol'n Set:

All real numbers

On xyz:

For no solution, put DNE (for Does Not Exist)

For all real numbers, put ∞

(two lower-case o's)

Prereading Assignment:

Read Section 2.5 (pp. 183 - 188)

Rework Example 2

Similar Example:

One number is 4 more than twice another. Their sum is 22. Find them.