

Name _____

Date _____

Mr. Tallman

Do Now

Find the quotient. Show all work.

1) $-10.8 \div 1.2$

$$\begin{array}{r} 9. \\ 1.2 \overline{) 10.8} \\ \underline{10.8} \\ 0 \end{array}$$

-9

2) $0.96 \div (-0.03)$

$$\begin{array}{r} 32. \\ 0.03 \overline{) 0.96} \\ \underline{0.96} \\ 0 \end{array}$$

-6

3) $-7.16 \div (-0.2)$

$$\begin{array}{r} 35.8 \\ 0.2 \overline{) 7.16} \\ \underline{6.4} \\ 10 \\ \underline{10} \\ 16 \\ \underline{16} \\ 0 \end{array}$$

35.8

Lesson #20 - One Step Equations with Decimals

Recall: When solving one step algebraic equations, we need to isolate the variable by performing **INVERSE OPERATIONS**.

- The inverse of addition is Subtraction.
- The inverse of subtraction is addition.
- The inverse of multiplication is division.
- The inverse of division is multiplication.

We solve one step equations involving decimals the exact same way as we solve one step equations with integers.

Example 1) Solve and check the following.

A) $x + 3 = 5$

$$\begin{array}{r} x + 3 = 5 \\ \underline{-3} \quad \underline{-3} \\ x = 2 \end{array}$$

x=2

Check

$$\begin{array}{l} x + 3 = 5 \\ 2 + 3 = 5 \\ 5 = 5 \checkmark \end{array}$$

B) $x + 3.2 = 5.8$

$$\begin{array}{r} x + 3.2 = 5.8 \\ \underline{-3.2} \quad \underline{-3.2} \\ x = 2.6 \end{array}$$

Check

$$\begin{array}{l} x + 3.2 = 5.8 \\ 2.6 + 3.2 = 5.8 \\ 5.8 = 5.8 \checkmark \end{array}$$

Example 2) Solve and check the following.

<p>A) $x - 7 = -15$ $\frac{x - 7}{+7} = \frac{-15}{+7}$ $x = -8$</p> <p><u>Check</u> $x - 7 = -15$ $-8 - 7 = -15$ $-8 + (-7) = -15$ $-15 = -15 \checkmark$</p>	<p>B) $x - 7.6 = -15.3$ $\frac{x - 7.6}{+7.6} = \frac{-15.3}{+7.6}$ $x = -7.7$</p> <p><u>Check</u> $x - 7.6 = -15.3$ $-7.7 - 7.6 = -15.3$ $-7.7 + (-7.6) = -15.3$ $-15.3 = -15.3 \checkmark$</p>
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Example 3) Solve and check the following.

<p>A) $\frac{6x}{-6} = \frac{24}{-6}$ $x = -4$</p> <p><u>Check</u> $-6x = 24$ $-6(-4) = 24$ $24 = 24 \checkmark$</p>	<p>B) $\frac{-2.2x}{-2.2} = \frac{8.8}{-2.2}$ $x = -4$</p> <p><u>Check</u> $-2.2x = 8.8$ $-2.2(-4) = 8.8$ $8.8 = 8.8 \checkmark$</p>
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Example 4) Solve and check the following.

<p>A) $\frac{x}{7} = (-9)7$ $x = -63$</p> <p><u>Check</u> $\frac{x}{7} = -9$ $\frac{-63}{7} = -9$ $-9 = -9 \checkmark$</p>	<p>B) $\frac{x}{2.5} = (-10.5)2.5$ $x = -26.25$</p> <p><u>Check</u> $\frac{x}{2.5} = -10.5$ $\frac{-26.25}{2.5} = -10.5$ $-10.5 = -10.5 \checkmark$</p>
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Evens only

Now, You Try! Solve and check each equation.

1) $-4.5 = k - 3.2$ $\quad +3.2 \quad +3.2$ \hline $k = -1.3$	Check 2) $-12 = -4.4 + x$ $\quad +4.4 \quad +4.4$ \hline $x = -7.6$ Check $-12 = -4.4 + x$ $-12 = -4.4 + (-7.6)$ $-12 = -12 \checkmark$
3) $24.2 = -1.1d$ $\quad \quad \quad -1.1 \quad -1.1$ \hline $d = -22$	Check 4) $-3.3h = -16.5$ $\quad \quad \quad -3.3 \quad -3.3$ \hline $h = 5$ Check $-3.3h = -16.5$ $-3.3(5) = -16.5$ $-16.5 = -16.5 \checkmark$
5) $\frac{b}{6} = (-5.8)6$ \hline $b = -34.8$	Check 6) $\frac{f}{-3} = (-2.3)3$ \hline $f = 6.9$ Check $\frac{f}{-3} = -2.3$ $\frac{6.9}{-3} = -2.3$ $-2.3 = -2.3 \checkmark$

Challenge:

A scuba diver is exploring at an elevation of -12.2 meters. As the diver rises to the surface, she plans to stop and rest briefly at a reef that is an elevation of -4.5 meters. Write and solve an equation to find the vertical distance that the diver traveled.

$x =$ distance traveled

$$-12.2 + x = -4.5$$

$$\quad +12.2 \quad +12.2$$

$$\hline$$

$$x = 7.7 \text{ meters}$$

