

Name: _____

Date: _____

Math 8/9 Honours Assignment 3.1 Solving Equations with Simple Operations

1. Solve the following equations for "x". If the answer is a fraction, simplify to lowest terms.

a) $3x - 5 = 13$	b) $\frac{n}{6} = \frac{6}{9}$	c) $8 + 5x = 12$
d) $-6x + 4 = -8$	e) $\frac{8}{9} = \frac{x}{5}$	f) $13 = -3x - 2$
g) $\frac{x}{8} = \frac{9}{23}$	h) $\frac{3}{x} = \frac{1}{12}$	i) $\frac{3}{4}x - 0.5 = \frac{2}{3}x$
j) $\frac{30}{x} = \frac{6}{14}$	k) $x + (x+1) + (x+2) = -75$	l) $3 - \frac{2}{x} = 5$
m) $\frac{x}{8} = \frac{x+1}{12}$	n) $\frac{8}{27} = \frac{2x}{189}$	o) $\frac{4x}{3} = -1$

p) $x + (x+1) + (x+2) = -75$	Q) $11x - 4(2x - 3) = 24$	R) $\frac{1}{2}(4x - 8) = 3x + 1$
s) $2(x+3) = 3(x-5)$	t) $\frac{4}{5} + \left(\frac{-1}{4}\right)x = \frac{-3}{4}$	u) $1.4(x-5) = 2.8(3x+5)$
v) $(11x+7) - (7x-3) + (6x+1) = 56$	w) $\frac{1}{2}\left(\frac{1}{3} - \frac{1}{x}\right) = \frac{1}{4}$	x) $3x - (1-x) = 5$
y) $3x - (1-x) = 5$	z) $(11x+7) - (7x-3) + (6x+1) = 56$	zz) $\frac{1}{3}(2x+5) = \frac{2x}{5} + 3$

2. Find the value(s) of "r" that satisfy the equation. Express your answer as a common fraction:

$$\frac{r}{3\frac{13}{15}} = \frac{7\frac{1}{2}}{5}$$

3. If 8% of $(n+2)$ equals 12, what is the value of "n"?

4. If the ratio of $3x - 5y$ to $x + 2y$ is 2:5, then what is the ratio of "x" to "y"?

5. If $W = \frac{S\pi d^2}{4}$, find the value of "W" when $S = 7000$ and $d = 0.8$

6. Solve for "x": $\left(\frac{-1}{3}\right)(-4 + 3x) = \frac{1}{2}$

7. Find a value for "a" such that: $\sqrt{\frac{5a}{3} - 4} = 11$

8. 25% The ratio of $x + 7$ to $2x + 7$ is 0.64. Find the value of $3x + 7$

9. Find the value of $A + B + C$ if "A" is 25% 40, 10 is 25% of "B", and 10 is C% of 40.

10. Two positive integers are in the ratio of 8 to 13. If the difference between them is 35, find the larger integer.
11. The lengths of five of six line segments are $3x+1$, $2-2x$, $5x-1$, $4x-3$, and $3x+2$. Find the length of the sixth segment in terms of "x" if the mean of all six segments is $3x-2$.
12. Given that $n!$ means the product of all natural numbers from "n" to 1, simplify the following:
$$5! \left(\frac{1}{2!} - \frac{1}{3!} - \frac{1}{5!} \right)$$
13. If $x + y = 12$ and $x - y = 8$, what is the value of $2x - xy$?
14. For positive integers "x" and "y", how many ordered pairs (x, y) satisfy $xy + x - y = 53$?
15. What is the smallest integer "n" such that $n(4.\overline{09} + 3.\overline{5})$ is a whole number?