Algebra 1
Extra #1.1 Review
Solving Equations

Solve each equation.

1. $-9 = 3t + 6$

$-6 \quad -6$

$-15 = 3t$

$t = -5$ **divide both sides by 3**

2. $\frac{n}{4} - 7 = -2$

$+7 \quad +7$

$4\left(\frac{n}{4}\right) = (5)4$ **multiply both sides by 4**

$n = 20$

3. $2(-18) = \left(\frac{9 - a}{2}\right)2$

$-36 = 9 - a$ **multiply both sides by 2**

$-9 \quad -9$

$-45 = -a$

$a = 45$ **divide both sides by -1**

4. $.2c + 4 = 6$

$-4 \quad -4$

$.2c = 2$

$c = 10$ **divide both sides by .2**

5. $4 = \dfrac{-3x-(-7)}{-8}$

-8 $\left[4\right] = \left(\dfrac{-3x+7}{-8}\right)$ -8 **simplify parentheses**

$-32 = -3x + 7$ **multiply both sides by -8**

-7 -7

$-39 = -3x$

x = 13 **divide both sides by -3**

6. $8m + 7 = 5m + 16$

-7 -7

$8m = 5m + 9$

-5m -5m

$3m = 9$

m = 3

7. $2x - 14 = -5x$

$-2x \qquad -2x$

$-14 = -7x$

$\mathbf{x = 2}$

8. $21 + 3y = 9 - 3y$

$-21 \qquad -21$

$3y = -12 - 3y$

$+3y \qquad +3y$

$6y = -12$

$\mathbf{y = -2}$

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

$2(x - 3) = 4x$ **cross-multiply**

$2x - 6 = 4x$ **distributive property**

$-2x \qquad -2x$

$-6 = 2x$

$\mathbf{x = -3}$ **divide both sides by 2**

10. $3(t + 4) = 33$

$3t + 12 = 33$ **distributive property**

$-12 \quad -12$

$3t = 21$

$\mathbf{t = 7}$

11. $-2(b - 3) - 4 = 18$

$-2b + 6 - 4 = 18$ **distributive property**

$-2b + 2 = 18$ **combine like terms**

$-2 \quad -2$

$-2b = 16$

$b = -8$ **divide both sides by -2**

12. $4(3z - 2) = 8(2z + 3)$

$12z - 8 = 16z + 24$ **distributive property**

$+8 \qquad +8$

$12z = 16z + 32$

$-16z \quad -16z$

$-4z = 32$

$z = -8$

13. $|x - 6| = 11$

$x - 6 = 11$ or $x - 6 = -11$ **set what's inside the absolute value sign = 11 or -11**

$+6 \quad +6 \qquad +6 \quad +6$

x = 17 or -5

14. $|-4w + 2| = 14$

$-4w + 2 = 14$ or $-4w + 2 = -14$ **set what's inside the absolute value = 14 or -14**

$-2 \quad -2 \qquad -2 \quad -2$

$-4w = 12$ or $-4w = -16$

w = -3 or 4

15. Solve: $3x + 2y = 9$, for y

$-3x \qquad -3x$

$$2y = -3x + 9$$

$$y = -\frac{3}{2}x + \frac{9}{2}$$

16. Solve: $14w + 15x = y - 21w$, for w

$+21w \quad -15x \quad -15x + 21w$

$$35w = y - 15x$$

$$w = \frac{y}{35} - \frac{3}{7}x$$

17. Solve: $7d - 3c = f + 2d$, for d

$-2d \quad +3c \qquad +3c - 2d$

$5d = 3c + f$

$$d = \frac{3c}{5} + \frac{f}{5}$$

Algebra 1
Extra #1.1
Assignment

Solve each equation.

1.) $5x + 1 = 3x - 3$

2.) $6(y - 5) = 18 - 2y$

3.) $3(x + 1) - 5 = 3x - 2$

4.) $\frac{3}{4}x - 4 = 7 + \frac{1}{2}x$

5.) $\frac{a-3}{8} = \frac{3}{4}$

6.) $\frac{4x+5}{5} = \frac{2x+7}{7}$

7.) $|10 - x| = 8$

8.) $|4z + 6| = 12$

Solve for x.

9.) $d(x - 3) = 5$

10.) $\frac{x + y}{c} = d$