

Name: Answers
 Date: _____
 Class: _____

Algebra
 Unit 2
 HW 2-1

1) Simplify: $\frac{1}{2}(7 - 3x) + 4x - (\frac{1}{3}x - 6)$

$$\frac{7}{2} - \frac{3}{2}x + 4x - \frac{1}{3}x + 6$$

$$\frac{13}{6}x + \frac{19}{2}$$

2) Simplify: $\frac{6x - 2(4x - 9)}{8 - 7x + 6(9 - 2x) - 10} = \frac{6x - 8x + 18}{8 - 7x + 54 - 12x - 10}$

$$= \frac{-2x + 18}{-19x + 52}$$

3) Evaluate: $\frac{7}{2}x - 6(5 - 2x) + \frac{6 - (4x - 2)}{4x - 2(3 - 6x)}$ when $x = -2$

$$\frac{7}{2}(-2) - 6(5 - 2(-2)) + \frac{6 - (4(-2) - 2)}{4(-2) - 2(3 - 6(-2))}$$

$$-7 - 6(5 - -4) + \frac{6 - (-8 - 2)}{-8 - 2(3 + 12)}$$

$$-7 - 6(9) + \frac{6 - (-10)}{-8 - 2(15)}$$

$$\begin{aligned} &\rightarrow -7 - 54 + \frac{16}{-8 - 30} \\ &-7 - 54 + \frac{16}{-38} \\ &\frac{-1167}{19} \end{aligned}$$

4) Simplify: $6x - 2(4x - 3) + x(4 - 2x)$

$$6x - 8x + 6 + 4x - 2x^2$$

$$-2x^2 + 2x + 6$$

5) If a rectangle has a length of $x + 9$ and a width of $x - 7$ what would an expression that could represent the area of this rectangle?

$$A = (x+9)(x-7)$$

$$x^2 - 7x + 9x - 63$$

$$x^2 + 2x - 63$$

6) Simplify: $2(x-3)(x+9) - (2-x)(5-2x)$

$$2(x^2 + 9x - 3x - 27) - (10 - 4x - 5x + 2x^2)$$

$$2(x^2 + 6x - 27) - (10 - 9x + 2x^2)$$

$$2x^2 + 12x - 54 - 10 + 9x - 2x^2$$

$$21x - 64$$

7) Evaluate: $\frac{x(x-4) - (x-2)(5-x)}{x^2 - 2x - 4}$ when $x = -4$

$$\frac{-4(-4-4) - (-4-2)(5-(-4))}{(-4)^2 - 2(-4) - 4}$$

$$\frac{-4(-8) - (-6)(9)}{16 + 8 - 4}$$

$$\frac{32 - (-54)}{20} = \frac{86}{20} = \frac{43}{10}$$