

- List all factors of 90. **1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90**
- Perform the division with remainder: $2008 \div 17 =$ **118 R 2**
- Simplify each of the following.
 - $|-3^3 - 2|-5 - 2(-4)| =$ **33**
 - $\sqrt{-4^2 - (-1)^4 + 2 \cdot 3^2 \div 2 \cdot 6 - 1} =$ **6**
 - $|(-3)^2 + |(-6)^2 + (-2)^3| - 2| + 1 =$ **36**
- Simplify each of the following.
 - $-(3a - 8b) - (5a - b) =$ **$-8a + 9b$**
 - $5x - 3(2x - y) =$ **$-x + 3y$**
 - $-y + 2(3x - y) - (2x - y) + 2(-2x + y) =$ **0**
 - $(3a - 5)^2 =$ **$9a^2 - 30a + 25$**
 - $(3a - 5)(3a + 5) =$ **$9a^2 - 25$**
 - $(3a - 1)(3a + 9a^2 + 1) =$ **$27a^3 - 1$**
- Evaluate the algebraic expression $\frac{-x + 2x^2 - 1}{x - 1}$ if
 - $x = 5$ **11**
 - $x = -5$ **-9**
 - $x = 1$ **undefined**
 - $x = -1$ **-1**
- Solve each of the following equations. Make sure to check your solutions.
 - $3(x - 1) - 5(3x + 2) = -13(x + 1)$ **0**
 - $4(x - 3) - 2(x - 1) = x - 2(4 - x)$ **-2**
 - $5(x - 1) - 2(x + 4) = 4 - 3(3 - x)$ **no solution**
 - $(b + 5)(b - 2)(2b + 11) = 0$ **$2, -5, -\frac{11}{2}$**
 - $\frac{x + 2}{4} - \frac{x - 3}{5} = 20 - x$ **18**
 - $\frac{2x - 1}{3} - \frac{2x + 1}{5} = \frac{4x - 8}{15}$ **identity; all numbers are solution**
 - $(2x + 1)(2x - 5) = (x - 2)(4x - 1)$ **7**
 - $8x = 2x^3$ **-2, 0, 2**

7. Solve each of the following inequalities. Graph the solution set.

(a) $2(x - 3) - 5(x - 1) > -x + 3$ $x < -2$

(b) $\frac{3x - 4}{5} - \frac{x - 4}{2} \leq \frac{2x + 4}{10}$ $x \geq 8$

(c) $2(x - 3) - 5(2x - 2) \geq 10 - 2x$ $x \leq -1$

8. Completely factor each of the following expressions.

(a) $10x - 1000x^3 = -10x(10x - 1)(10x + 1)$

(b) $-75m^2 + 27 = -3(5m - 3)(5m + 3)$

(c) $2x^4y^3 - 32y^3 = 2y^3(x - 2)(x + 2)(x^2 + 4)$

9. Consider the equation $-x + y - 3x^2 = -x^2 - 6(x + 1) + x^3$. For each of the following points given, determine whether it is on the graph of the equation or not.

(a) $(2, -1)$ $-15 \neq -14$ no

(b) $(-1, 0)$ $-2 = -2$ yes

(c) $(3, 24)$ $-6 = -6$ yes

(d) $(-2, 4)$ $-6 = -6$ yes

(e) $(-3, -1)$ $-25 \neq -24$ no