**Task #1:**

Determine which numbers (-9, -7/2, 5, 2/3, $\sqrt{2}$, 0, 1, -4, 2, -11) are:

1. Natural #’s (b) Integers (c) Rational #’s (d) Irrational #’s

**Task #2:**

Identify the property of algebra illustrated by the statement.

1. x + 9 = 9 + x \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $\frac{1}{(h+6)} ● \left(h+6\right)=1$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. (x + 3) – (x + 3) = 0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 2(x + 3) = 2x + 6 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 1 ● (1 + x) = 1 + x \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. x + (y + 10) = (x + y) + 10 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Task #3:**

Simplify.

1. (3x)2  (b) (4x3)2  (c) (-z)3(3z4) (d) $\frac{12 (x+y)^{3}}{9(x+y)}$

(e) (2x2)-2  (f) (2x5)0  (g) (z+2)-3(z+2)-1 (h) $(\frac{x^{-3}y^{4}}{5})^{-3}$

**Task #4:**

Simplify.

1. $\sqrt{8}$ (b) $\sqrt[3]{24}$ (c) $\sqrt{72x^{3}}$ (d) $\sqrt{75x^{2}y^{-4}}$

Rationalize the denominator.

1. $\frac{1}{\sqrt{3}}$ (f) $\frac{2}{5-\sqrt{3}}$ (g) $\frac{5}{\sqrt[3]{4}}$

**Task #5:**

Perform the operation.

1. (6x + 5) – (8x + 15) (b) (7x3 – 2x2 + 8) + (-3x3 – 4) (c) (5-8x)2

 (d) (x2 + 9)(x2 – x – 4) (e) $\frac{9x^{2}y^{4}-3x^{3}y^{5}-5xy}{3x^{3}y^{4}}$

**Task #6:**

Factor:

1. 2x3 - 6x (b) 9u2 - 4v2  (c) 9u2 + 24uv + 16v2

 (d) 27x3 + 8 (e) 3x2 - 5x + 2 (f) x3 - x2 + 2x - 2

**Task #7:**

Simplify.

(a) $\frac{z^{3}-8}{z^{2}+2z+4}$ (b) $\frac{1}{x^{2}-x-2}- \frac{x}{x^{2}-5x+6}$ (c) $\frac{\frac{1}{2x-3}-\frac{1}{2x+3}}{\frac{1}{2x}-\frac{1}{2x+3}}$