Algebra Review Test 1

1. Evaluate:
   (a) $-(+6)$
   (b) $-(-10)$
   (c) $10 - 7$
   (d) $7 - 10$
   (e) $10 + (-4)$
   (f) $-10 + (-4)$
   (g) $-10 + 4$
   (h) $8 \times 3 - 2$
   (i) $-2 + 8 \times 3$
   (j) $(-2 + 8) \times 3$
   (k) 4^2
   (l) -4^2
   (m) $(-4)^2$
   (n) $5 - 2^2$
   (o) $(5 - 2)^2$
   (p) $2 - 3 \cdot 4 + 2^3$
   (q) $8 - 4 \div 2$
   (r) $12 - 8/4$
   (s) $1 - (-2) \cdot 3 + 4$

2. If $x = 2, y = -3, z = 4, w = -12, v = 12$, substitute in each expression:
   (a) $xy - z$
   (b) $x - yz$
   (c) $xyz + v \div x$
   (d) $w \div z - x$
   (e) $w \div (z - x)$

3. What is the commutative property of addition?

4. What is the commutative property of multiplication?

5. Compare the following decimals with $<, >$ or $=$:
   (a) 0.2_____0.4
   (b) 0.415_____0.5
   (c) -0.8_____0.2
   (d) 1.815_____2
   (e) 1.01000_____1.01
   (f) -1.1_____ -1.09
   (g) 5_____2

6. Evaluate:
   (a) $1.8 + 2.1$
   (b) $3.7 - 1.5$
   (c) $6.7 + 3.8$
   (d) $1.28 + 3.09$
   (e) $1.6 - 0.2$
   (f) $8.2 - 1.9$
   (g) $2.8 - 9.1$
   (h) $31.25 - 2.8$
   (i) $2.81 - 31$
   (j) $3.12 + 2.14 - 1.11$
   (k) 3.5×3
   (l) $4.5 \cdot 5$
   (m) 2.5×2.5
   (n) 4.12×3
   (o) 5.56×7
   (p) 2.5×0.3
   (q) 0.25×0.62
   (r) 11.512×0.04
   (s) $3.2 \div 4$
   (t) $5.4 \div 3$
   (u) $12.5 \div 5$
   (v) $2.56 \div 0.4$
   (w) $288 \div 1.2$

7. Substitute $x = 1.5, y = 5.2, z = -3, w = -10.12, v = 4$ into:
   (a) $x + y$
   (b) $x - y$
   (c) xy
   (d) $x \div v$
   (e) xy
   (f) $xy - z$
   (g) $w \div v + x$

8. Write in scientific notation:
   (a) 1200
   (b) 300
   (c) -314

(d) $1,200,000$

(e) 51430

(f) 514.543

(g) 0.2

(h) 0.123

(i) 0.0000051234

(j) -0.00000515

9. Write each number as a decimal number

(a) 5×10^2

(b) 3.1×10^2

(c) 5.3×10^4

(d) 1.3521×10^1

(e) 5×10^{-2}

(f) -5×10^2

(g) -5×10^{-2}

(h) 5.1643×10^{-5}

(i) 3.141592×10^{-3}

10. Evaluate:

(a) $\frac{3}{11} + \frac{4}{11}$

(b) $\frac{5}{7} + \frac{2}{7}$

(c) $\frac{9}{13} - \frac{4}{13}$

(d) $\frac{10}{3} - \frac{8}{3}$

(e) $\frac{1}{3} + \frac{1}{5}$

(f) $\frac{1}{3} - \frac{2}{7}$

(g) $\frac{2}{6} + \frac{3}{12}$

(h) $\frac{9}{6} - \frac{8}{9}$

11. Compare the fractions using $<, >$ and $=$:

(a) $\frac{2}{5}$_____$\frac{1}{5}$

(b) $\frac{-2}{5}$_____$\frac{1}{5}$

(c) $\frac{2}{5}$_____$\frac{3}{7}$

(d) $\frac{7}{9}$_____$\frac{9}{12}$

12. Simplify the following fractions:

(a) $\frac{4}{8}$

(b) $\frac{2}{6}$

(c) $\frac{8}{24}$

(d) $\frac{9}{45}$

(e) $\frac{8}{20}$

(f) $\frac{10x^2}{5x^3}$

(g) $\frac{10xy^3}{20x^2}$

(h) $\frac{10a^4b}{16ab^4}$

13. Convert the following fractions to decimals, round to nearest one thousandth:

(a) $\frac{1}{4}$

(b) $\frac{1}{3}$

(c) $\frac{1}{9}$

(d) $\frac{2}{7}$

(e) $\frac{4}{6}$

(f) $\frac{13}{7}$

14. Convert the following decimals to fractions:

(a) 0.5

(b) 0.21

(c) $0.\overline{3}$

(d) 0.00315

15. (Geometry Group Only) Perform the indicated operations and simplify:

(a) $\frac{2}{5} \cdot \frac{3}{7}$

(b) $\frac{3}{5} \cdot \frac{6}{7}$

(c) $\frac{2}{9} \cdot \frac{5}{8}$

(d) $\frac{2}{9} \cdot \frac{18}{7}$

(e) $\frac{3}{4} \times \frac{16}{27}$

(f) $\frac{4}{5} \div \frac{1}{3}$

(g) $\frac{8}{9} \div \frac{2}{3}$

(h) $\frac{12}{15} \div \frac{3}{5}$

(i) $\frac{2}{3} \times \frac{0}{1}$

(j) $\frac{2}{3} \div \frac{0}{1}$