

$$1. a) -(+6) = \boxed{-6}$$

$$b) -(-10) = \boxed{10}$$

$$c) 10-7 = \boxed{3}$$

$$d) 7-10 = \boxed{-3}$$

$$e) 10+(-4) = \boxed{6}$$

$$f) -10+(-4) = \boxed{-14}$$

$$g) -10+4 = \boxed{-6}$$

$$h) 8 \times 3 - 2$$

$$= 24 - 2$$

$$= \boxed{22}$$

$$i) -2 + 8 \times 3$$

$$= -2 + 24$$

$$= \boxed{22}$$

$$j) (-2+8) \times 3$$

$$= (6) \times 3$$

$$= \boxed{18}$$

$$k) 4^2 = \boxed{16}$$

$$l) -4^2 = \boxed{-16}$$

$$m) (-4)^2 = (-4) \cdot (-4)$$

$$= \boxed{16}$$

$$n) 5-2^2$$

$$= 5-4$$

$$= \boxed{1}$$

$$o) (5-2)^2$$

$$= (3)^2$$

$$= \boxed{9}$$

$$p) 2-3 \cdot 4 + 2^3$$

$$= 2-3 \cdot 4 + 8$$

$$= 2-12+8$$

$$= -10+8$$

$$= \boxed{-2}$$

$$q) 8-4 \div 2$$

$$= 8-2$$

$$= \boxed{6}$$

$$r) 12-8/4$$

$$= 12-2$$

$$= \boxed{10}$$

$$s) 1-(-2) \cdot 3 + 4$$

$$= 1-(-6) + 4$$

$$= 1+6+4$$

$$= \boxed{11}$$

$$2. x=2, y=-3, z=4$$

$$w=-12, v=12$$

$$a) xy - z$$

$$= 2(-3) - 4$$

$$= -6-4$$

$$= \boxed{-10}$$

$$b) x - y \cdot z$$

$$= 2 - (-3) \cdot 4$$

$$= 2 - (-12)$$

$$= \boxed{14}$$

$$c) xyz + v \div x$$

$$= (-2)(-3)(4) + 12 \div 2$$

$$= (-6)(4) + 6$$

$$= -24 + 6 = \boxed{-18}$$

$$d) w \div z - x$$

$$= -12 \div 4 - 2$$

$$= -3 - 2$$

$$= \boxed{-5}$$

$$e) w \div (z - x)$$

$$= -12 \div (4 - 2)$$

$$= -12 \div 2$$

$$= \boxed{-6}$$

3. What is the commutative property of addition?

$$a + b = b + a$$

4. What is the commutative property of multiplication?

$$ab = ba$$

5. (a) $0.2 < 0.4$ (b) $0.415 < 0.5$ (c) $-0.8 < 0.2$
 (d) $1.915 < 2$ (e) $1.01000 = 1.01$ (f) $-1.1 < -1.09$
 (g) $5 > 2$

6. (a)
$$\begin{array}{r} 2.1 \\ + 1.8 \\ \hline 3.9 \end{array}$$
 (b)
$$\begin{array}{r} 3.7 \\ - 1.5 \\ \hline 2.2 \end{array}$$
 (c)
$$\begin{array}{r} 6.7 \\ + 3.8 \\ \hline 10.5 \end{array}$$
 (d)
$$\begin{array}{r} 1.28 \\ + 3.09 \\ \hline 4.37 \end{array}$$
 (e)
$$\begin{array}{r} 1.6 \\ - 0.2 \\ \hline 1.4 \end{array}$$
 (f)
$$\begin{array}{r} 78.2 \\ - 1.9 \\ \hline 6.3 \end{array}$$

- (g)
$$\begin{array}{r} 9.1 \\ - 2.8 \\ \hline 6.3 \end{array}$$
 (h)
$$\begin{array}{r} 210.25 \\ - 2.80 \\ \hline 28.45 \end{array}$$
 (i)
$$\begin{array}{r} 210.99 \\ - 2.81 \\ \hline 28.19 \end{array}$$
 (j)
$$\begin{array}{r} 3.12 \\ + 2.19 \\ \hline 5.26 \\ - 1.11 \\ \hline 4.15 \end{array}$$

 $2.8 - 9.1 = -8.3$ $2.81 - 31 = -28.81$

- (k)
$$\begin{array}{r} 3.5 \\ \times 3 \\ \hline 10.5 \end{array}$$
 (l)
$$\begin{array}{r} 4.5 \\ \times 5 \\ \hline 22.5 \end{array}$$
 (m)
$$\begin{array}{r} 2.5 \\ \times 2.5 \\ \hline 12.5 \\ 50.0 \\ \hline 6.25 \end{array}$$
 (n)
$$\begin{array}{r} 4.12 \\ \times 3 \\ \hline 12.36 \end{array}$$
 (o)
$$\begin{array}{r} 5.56 \\ \times 7 \\ \hline 38.92 \end{array}$$

- (p)
$$\begin{array}{r} 2.5 \\ + 0.3 \\ \hline 2.8 \\ \hline 0.75 \end{array}$$
 (q)
$$\begin{array}{r} 0.25 \\ \times 0.62 \\ \hline 50 \\ 1300 \\ \hline 1350 \\ \hline 0.1350 \end{array}$$
 (r)
$$\begin{array}{r} 11.512 \\ \times 0.04 \\ \hline 46048 \\ \hline 0.46048 \end{array}$$
 (s)
$$\begin{array}{r} 3.2 \\ \times 0.8 \\ \hline 32 \\ \hline 0 \end{array}$$
 (t)
$$\begin{array}{r} 5.4 \\ - 3.6 \\ \hline 1.8 \\ \hline 0 \end{array}$$

Algebra Test 1 Review Solutions

ps ③

$$6. (u) \begin{array}{r} \boxed{2.5} \\ 5 \overline{) 12.5} \\ \underline{-10} \\ 25 \\ \underline{-25} \\ 0 \end{array}$$

$$(v) \begin{array}{r} \boxed{6.4} \\ 4 \overline{) 25.6} \\ \underline{-24} \\ 16 \\ \underline{-16} \\ 0 \end{array}$$

$$(w) \begin{array}{r} \boxed{240} \\ 12 \overline{) 2880} \\ \underline{-24} \\ 48 \\ \underline{-48} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

7, $x=1.5$ $y=5.2$ $z=-3$, $w=-10.12$ $v=4$

$$(a) \begin{array}{r} 1.5 \\ +5.2 \\ \hline \boxed{6.7} \end{array}$$

$$(b) \begin{array}{r} 5.2 \\ -1.5 \\ \hline 3.7 \end{array}$$

$$1.5 - 5.2 = \boxed{-3.7}$$

$$(c) \begin{array}{r} 1.5 \\ \times 5.2 \\ \hline 30 \\ 650 \\ \hline \boxed{6.80} \end{array}$$

$$d) \begin{array}{r} 1.5 \div 4 \\ \begin{array}{r} .375 \\ 4 \overline{) 1.500} \\ \underline{-12} \\ 30 \\ \underline{-28} \\ 20 \\ \underline{-20} \\ 0 \end{array} \end{array}$$

$$(e) \boxed{6.80}$$

$$(f) xy - z$$

(Problem (e) says $xy = 6.8$)
 $6.8 - (-3) = \boxed{9.8}$

$$(g) \begin{array}{r} w \div v + x = 2.53 + 1.5 \\ \begin{array}{r} 2.531 \\ 4 \overline{) 10.12} \\ \underline{-8} \\ 21 \\ \underline{-20} \\ 12 \\ \underline{-12} \\ 0 \end{array} \end{array}$$

$$\begin{array}{r} 2.53 \\ +1.50 \\ \hline \boxed{4.03} \end{array}$$

$$8. a) 1200 = \boxed{1.2 \times 10^3}$$

$$(b) 300 = \boxed{3 \times 10^2}$$

$$(c) -3/4 = \boxed{-3.14 \times 10^2}$$

$$d) \boxed{1.2 \times 10^6}$$

$$(e) \boxed{5.143 \times 10^4}$$

$$(f) \boxed{5.14543 \times 10^2}$$

$$(g) \boxed{2 \times 10^{-1}}$$

$$h) \boxed{1.23 \times 10^{-1}}$$

$$i) \boxed{5.1234 \times 10^{-6}}$$

$$j) \boxed{-5.15 \times 10^{-6}}$$

9. a) $\boxed{500}$ b) $\boxed{310}$ c) $\boxed{53000}$ d) $\boxed{13,521}$ e) $\boxed{.05}$
 f) $\boxed{-500}$ g) $\boxed{-.05}$ h) $\boxed{.000051643}$ i) $\boxed{.003141592}$

10. a) $\boxed{\frac{7}{11}}$ b) $\boxed{\frac{7}{7} = 1}$ c) $\boxed{\frac{5}{13}}$ d) $\boxed{\frac{2}{3}}$ e) $\frac{5}{5} \cdot \frac{1}{3} + \frac{1}{5} \cdot \frac{3}{3}$
 $= \frac{5}{15} + \frac{3}{15} = \boxed{\frac{8}{15}}$

f) $\frac{7}{7} \cdot \frac{1}{3} - \frac{2}{7} \cdot \frac{3}{3}$
 $= \frac{7}{21} - \frac{6}{21}$
 $= \boxed{\frac{1}{21}}$

g) $\frac{2}{2} \cdot \frac{2}{6} + \frac{3}{12}$
 $= \frac{4}{12} + \frac{3}{12}$
 $= \boxed{\frac{7}{12}}$

h) $\frac{9}{9} \cdot \frac{9}{6} - \frac{8}{9} \cdot \frac{6}{6}$
 $= \frac{81}{54} - \frac{48}{54}$
 $= \boxed{\frac{33}{54}}$ or $\boxed{\frac{11}{18}}$

11. (a) $\boxed{\frac{2}{5} < \frac{1}{5}}$ (b) $\boxed{-\frac{2}{5} < \frac{1}{5}}$ (c) $\frac{7}{7} \cdot \frac{2}{5} \quad \frac{3}{7} \cdot \frac{5}{5}$
 $\boxed{\frac{14}{35} < \frac{15}{35}}$ d) $\frac{12}{12} \cdot \frac{7}{9} \quad \frac{9}{12} \cdot \frac{9}{9}$
 $\boxed{\frac{84}{108} > \frac{81}{108}}$

12. (a) $\frac{4}{8} = \boxed{\frac{1}{2}}$ (b) $\frac{2}{6} = \boxed{\frac{1}{3}}$ (c) $\frac{8}{24} = \frac{8 \cdot 1}{8 \cdot 3} = \boxed{\frac{1}{3}}$ (d) $\frac{9}{45} = \frac{9 \cdot 1}{9 \cdot 5} = \boxed{\frac{1}{5}}$

(e) $\frac{8}{20} = \frac{4 \cdot 2}{4 \cdot 5} = \boxed{\frac{2}{5}}$ (f) $\frac{2x^2}{8x^3} = \frac{2x^2}{x^3} = \boxed{\frac{2}{x}}$

(g) $\frac{10xy^3}{20x^2} = \frac{xy^3}{2x^2} = \boxed{\frac{y^3}{2x}}$ (h) $\frac{10a^3b}{16ab^3} = \frac{2 \cdot 5a^3}{2 \cdot 8b^3} = \boxed{\frac{5a^3}{8b^3}}$

13 (a)
$$\begin{array}{r} \boxed{.25} \\ 4 \overline{) 1.00} \\ \underline{-8} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

(b)
$$\begin{array}{r} \boxed{.3333} \\ 3 \overline{) 1.0000} \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \end{array}$$

(c)
$$\begin{array}{r} \boxed{.111} \\ 9 \overline{) 1.000} \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \end{array}$$
 $\boxed{.111}$ 135

(d)
$$\begin{array}{r} \boxed{.2857} \\ 7 \overline{) 2.0000} \\ \underline{-14} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-35} \\ 50 \\ \underline{-49} \\ 10 \end{array}$$

Round to $\boxed{.286}$

(e)
$$\begin{array}{r} \boxed{.666} \\ 6 \overline{) 4.000} \\ \underline{-36} \\ 40 \\ \underline{-36} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

Round to $\boxed{.667}$

(f)
$$\begin{array}{r} \boxed{1.8571} \\ 7 \overline{) 15.0000} \\ \underline{-7} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-35} \\ 50 \\ \underline{-49} \\ 10 \end{array}$$

Round to $\boxed{1.857}$

14. (a) $0.5 = \frac{5}{10} = \boxed{\frac{1}{2}}$ (b) $.21 = \boxed{\frac{21}{100}}$ (c) $0.\overline{3} = \boxed{\frac{1}{3}}$ d) $.00315 = \boxed{\frac{315}{100000}}$

15. a) $\frac{2}{5} \cdot \frac{3}{7} = \boxed{\frac{6}{35}}$ (b) $\frac{3}{5} \cdot \frac{6}{7} = \boxed{\frac{18}{35}}$ (c) $\frac{2}{9} \cdot \frac{5}{84} = \boxed{\frac{5}{36}}$

(d) $\frac{2}{9} \cdot \frac{28}{7} = \boxed{\frac{4}{9}}$ (e) $\frac{2}{14} \times \frac{164}{219} = \boxed{\frac{4}{9}}$ (f) $\frac{4}{5} \div \frac{1}{3} = \frac{4}{5} \cdot \frac{3}{1} = \boxed{\frac{12}{5}}$

(g) $\frac{8}{9} \div \frac{2}{3} = \frac{8}{9} \cdot \frac{3}{2} = \boxed{\frac{4}{3}}$ (h) $\frac{12}{518} \div \frac{3}{5} = \frac{4}{87} \cdot \frac{5}{3} = \boxed{\frac{4}{3}}$

(i) $\frac{2}{3} \times \frac{0}{1} = \frac{2}{3} \times 0 = \boxed{0}$ (j) $\frac{2}{3} \div \frac{0}{1} = \frac{2}{3} \div 0$ undefined