

# 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)  $0.2 \underline{\hspace{1cm}} 0.4$
- (b)  $0.415 \underline{\hspace{1cm}} 0.5$
- (c)  $-0.8 \underline{\hspace{1cm}} 0.2$
- (d)  $1.815 \underline{\hspace{1cm}} 2$
- (e)  $1.01000 \underline{\hspace{1cm}} 1.01$
- (f)  $-1.1 \underline{\hspace{1cm}} -1.09$

(g)  $5 \underline{\hspace{1cm}} 2$

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)  $3.5 \times 3$
- (l)  $4.5 \cdot 5$
- (m)  $2.5 \times 2.5$
- (n)  $4.12 \times 3$
- (o)  $5.56 \times 7$
- (p)  $2.5 \times 0.3$
- (q)  $0.25 \times 0.62$
- (r)  $11.512 \times 0.04$
- (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)  $5 \times 10^2$

(b)  $3.1 \times 10^2$

(c)  $5.3 \times 10^4$

(d)  $1.3521 \times 10^1$

(e)  $5 \times 10^{-2}$

(f)  $-5 \times 10^2$

(g)  $-5 \times 10^{-2}$

(h)  $5.1643 \times 10^{-5}$

(i)  $3.141592 \times 10^{-3}$

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)  $0.\bar{3}$

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