

# A.1 Homework Packet

**Alg 2/Trig HW A.1.2: 1-21 odd, 23-47 EOO (every other odd: 23, 27, 31, ...)**

**Do all work on your own paper. Make sure to copy each problem and show work.**

Use one of the symbols  $<$ ,  $=$ , or  $>$  to make a true statement.

1.  $5 \cdot 1 \underline{\quad ? \quad} 5 \div 1$

2.  $1 \cdot 5 \underline{\quad ? \quad} 1 \div 5$

3.  $\frac{3+2}{3-2} \underline{\quad ? \quad} \frac{4+2}{4-2}$

4.  $\frac{3+2}{3-2} \underline{\quad ? \quad} \frac{6+4}{6-4}$

5.  $3^2 \cdot 4^2 \underline{\quad ? \quad} (3 \cdot 4)^2$

6.  $3^2 + 4^2 \underline{\quad ? \quad} (3 + 4)^2$

7.  $(9 - 3) - 2 \underline{\quad ? \quad} 9 - (3 - 2)$

8.  $(9 + 3) + 2 \underline{\quad ? \quad} 9 + (3 + 2)$

9.  $(9 \cdot 3) \cdot 2 \underline{\quad ? \quad} 9 \cdot (3 \cdot 2)$

10.  $(12 \div 6) \div 2 \underline{\quad ? \quad} 12 \div (6 \div 2)$

**Simplify.**

11. a.  $11 - 3 + 5 - 2$

b.  $11 - (3 + 5) - 2$

c.  $11 - (3 + 5 - 2)$

12. a.  $12 - 5 - 2 + 3$

b.  $12 - (5 - 2) + 3$

c.  $12 - (5 - 2 + 3)$

13. a.  $3 \cdot 8 + 4 \cdot 5$

b.  $3 \cdot (8 + 4) \cdot 5$

c.  $3 \cdot (8 + 4 \cdot 5)$

14. a.  $4^2 - 6 \div 2 + 3$

b.  $(4^2 - 6) \div 2 + 3$

c.  $(4^2 - 6) \div (2 + 3)$

15.  $6 - [7 - (5 - 2)]$

16.  $14 - 2[9 - 2(5 - 3)]$

17.  $\frac{2^3 + 1}{2^2 - 1}$

18.  $\frac{3^2}{5 - (3 - 1)}$

19.  $\frac{1}{3} \left| \frac{1 + 7^2}{5^2} \right|$

20.  $\frac{2^2(3^2 + 4^2)}{10^2}$

21.  $64 \div 4^2 + 3(3^2 - 1)$

22.  $2^2 \cdot 3^2 - (5^2 - 4^2)$

23.  $[3^3 - (2^3 + 2^2)] \div 5$

24.  $\frac{1}{10}[2(3 + 4) - 3^2]$

Evaluate each expression if  $x = 3$ ,  $y = 2$ , and  $z = 5$ .

25.  $2x^2 + x - 2$

27.  $(yz - x)^3$

29.  $\frac{4z^3}{x^2 - y^2}$

31.  $\frac{x + z}{y} - \frac{x + y}{2z}$

33.  $\left(\frac{xyz}{x - y + z}\right)^4$

35.  $\frac{z^2 - (x^2 - y^2)}{3y^2z}$

26.  $3y^2 - y - 5$

28.  $(xz - zy)^3$

30.  $\frac{4xyz}{z^2 - x^2}$

32.  $\frac{z^2}{x + y} - \frac{y^2}{z - x}$

34.  $\left(\frac{z^2 - y^2 - x^2}{xy}\right)^5$

36.  $\frac{z^2 - y^2}{xz - 2y(z - x)}$

Evaluate each expression if  $a = 6$  and  $b = -2$ .

37.  $2|a| + |b|$

39.  $|a|^2 - |b|^2$

38.  $|a| - 3|b|$

40.  $|a^2 - b^2|$

Evaluate each expression for the given values of the variables.

41.  $\frac{3u^2 - 2(v - 3)^2}{2(u^2 - 1) - v^2}$ ;  $u = 4$ ,  $v = 5$

42.  $\frac{3(r^2 - s^2) + 5(r - s)^2}{(r + s)^2}$ ;  $r = 7$ ,  $s = 3$

43.  $\frac{(2r^2 + s^2)(13r - 3s)^2}{5r^2 + 4rs + s^2}$ ;  $r = 3$ ,  $s = 8$

44.  $\frac{(g^2 + h^2)(g^2 - h)^2}{(g + h)^2(3h^2 - 2gh - g^2)}$ ;  $g = 6$ ,  $h = 8$

Insert grouping symbols in each expression to make a true equation.

**Sample**  $3 + 2^2 - 10 \div 5 = 3$

**Solution**  $[(3 + 2)^2 - 10] \div 5 = 3$

45.  $18 \div 2 - 3 \cdot 2 + 1 = 0$

47.  $6 - 5 - 3 \cdot 2 = 8$

46.  $7 - 2 \cdot 5 - 3 + 2 = 12$

48.  $24 \div 3 + 1 - 2 \cdot 2 + 3 = 60$