

**Algebra 1 Prerequisite Review****What is the simplified form of each expression?**

1.  $5(14 - 2)^2 \div 2$
2.  $4(20 + 12) \div (4 - 3)$
3.  $3^3 \cdot 32 + 12 \div 4$
4.  $13 \left[ 6^2 \div (5^2 - 4^2) + 9 \right]$
5. Evaluate  $u + xy$ , for  $u = 18$ ,  $x = 10$ , and  $y = 8$ .
6. Evaluate  $\frac{u}{z} + xy^2$ , for  $u = 20$ ,  $x = 4$ ,  $y = 7$ , and  $z = 10$ .
7. Evaluate  $(ab)^2$  for  $a = 4$  and  $b = 3$ .
8. A square field has an area of 479 ft<sup>2</sup>. What is the approximate length of a side of the field? Give your answer to the nearest foot.
9. What is an inequality that compares the numbers  $\sqrt{70}$  and  $8\frac{1}{2}$ ?
10. What is the order of  $\sqrt{5}$ ,  $-0.1$ ,  $-\frac{5}{3}$ ,  $0.7$ ,  $\sqrt{2}$  from least to greatest?

**What is each sum?**

11.  $-7 + 5$
12.  $-6 + (-3)$
13.  $-6.1 + 1.7$
14.  $\frac{7}{3} + \left(-\frac{3}{8}\right)$

**What is each difference?**

15.  $\frac{9}{4} - \frac{1}{7}$

16.  $-1.8 - 3.9$

17.  $8 - 8$

18. A mountain climber ascends a mountain to its peak. The peak is 12,740 ft above sea level. The climber then descends 200 ft to meet a fellow climber. Find the climber's elevation above sea level after meeting the other climber.

**What is each product?**

19.  $8(-1)$

20.  $4.3(-2.9)$

21.  $\frac{5}{10} \cdot \frac{10}{3}$

22.  $(-6.8)^2$

\_\_\_\_\_ 23. What is the value of  $\frac{x}{y}$  when  $x = \frac{9}{4}$  and  $y = \frac{3}{5}$ ?

a.  $\frac{15}{4}$

c.  $\frac{27}{20}$

b.  $\frac{4}{3}$

d.  $-\frac{15}{4}$

**What is the simplified form of each expression?**

24.  $\frac{1}{3}(21m + 27)$

25.  $(4 - c)(-1)$

26.  $(2 - 9c)(-8)$

27.  $1.7m^2 + 6.5n - 4n + 2.5m^2 - n$

28.  $2.5m^2 + 7.8n - 3.2n + 5.3m^2 - 5.9n$

What is the simplified form of each expression?

29.  $-(8d - 3w)$

30.  $-(-10p + 4r)$

To which set of numbers does the number belong?

31.  $\sqrt{51}$

32.  $-55$

33.  $-\frac{2}{15}$

Find the sum or difference. Simplify if possible.

34.  $\frac{4}{12} + \frac{9}{12}$

Simplify.

35.  $\frac{2}{3} + \frac{1}{11}$

36.  $-\frac{17}{9} - \frac{14}{8}$

37.  $\frac{2}{4} - \frac{6}{8}$

38.  $\frac{7}{24} - \frac{15}{90}$

Find the product. Simplify if possible.

39.  $\frac{6}{12} \cdot \left(\frac{7}{9}\right)$

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$$40. -\frac{5}{9} \cdot \left(\frac{6}{8}\right)$$

$$41. -\frac{4}{7} \cdot \left(-\frac{3}{4}\right)$$

$$42. \frac{12y}{13} \cdot \frac{11}{24}$$

\_\_\_\_\_ 43. Which product is *not* equal to  $-1$ ?

a.  $-\frac{4}{5} \cdot \frac{85}{68}$

b.  $\frac{3}{27} \cdot \left(-\frac{216}{24}\right)$

c.  $\frac{7}{8} \cdot \left(-\frac{16}{14}\right)$

d.  $-\frac{1}{12} \cdot (-12)$

**Find the quotient. Simplify if possible.**

$$44. \frac{2}{9} \div \left(-\frac{3}{27}\right)$$

$$45. -\frac{6}{10} \div \left(-\frac{5}{7}\right)$$

$$46. \frac{q}{7} \div \frac{q}{26}$$