

In exercises 1 - 33, perform the indicated multiplication.

1) $5(-9)$

3) $(-8)(-3)$

5) $(-3)(7)$

7) $(-19)(-1)$

9) $0(-19)$

11) $\frac{1}{2}(-24)$

13) $(-\frac{3}{4})(-12)$

15) $-\frac{3}{5} \cdot (-\frac{4}{7})$

17) $-\frac{7}{9} \cdot \frac{2}{3}$

19) $3(-1.2)$

21) $-0.2(-0.6)$

23) $(-5)(-2)(3)$

25) $(-4)(-3)(-1)(6)$

27) $-2(-3)(-4)(-1)$

29) $(-3)(-3)(-3)$

31) $5(-3)(-1)(2)(3)$

33) $(-8)(-4)(0)(-17)(-6)$

In exercises 35 - 41 odd, find the multiplicative inverse of each number.

$$35) 4$$

$$37) \frac{1}{5}$$

$$39) -10$$

$$41) -\frac{2}{5}$$

In exercises 47 - 75 odd, perform the indicated division or state that the expression is undefined.

$$47) \frac{12}{-4}$$

$$49) \frac{-21}{3}$$

$$51) \frac{-90}{-3}$$

$$53) \frac{0}{-7}$$

$$55) \frac{7}{0}$$

$$57) -15 \div 3$$

$$59) 120 \div (-10)$$

$$61) (-180) \div (-30)$$

$$63) 0 \div (-4)$$

$$65) -4 \div 0$$

$$67) \frac{-12.9}{3}$$

$$69) -\frac{1}{2} \div \left(-\frac{3}{5}\right)$$

$$71) -\frac{14}{9} \div \frac{7}{8}$$

$$73) \frac{1}{3} \div \left(-\frac{1}{3}\right)$$

$$75) 6 \div \left(-\frac{2}{5}\right)$$

In exercise 77 - 95 odd, simplify each algebraic expression.

$$77) -5(2x)$$

$$79) -4\left(-\frac{3}{4}y\right)$$

$$81) 8x + x$$

$$83) -5x + x$$

$$85) 6b - 7b$$

$$89) -4(2x - 3)$$

$$91) -3(-2x + 4)$$

$$93) -(2y - 5)$$

$$95) 4(2y - 3) - (7y + 2)$$

In exercises 97 - 107 odd, determine whether the given number is a solution of the equation.

$$97) 4x = 2x - 10; -5$$

$$99) -7y + 18 = -10y + 6; -4$$

$$101) 5(w + 3) = 2w - 21; -10$$

$$103) 4(6 - z) + 7z = 0; -8$$

$$105) 14 - 2x = -4x + 7; -2\frac{1}{2}$$

$$107) \frac{5m-1}{6} = \frac{3m-2}{4}; -4$$

The graph on page 80 shows the percentage of high school seniors who used alcohol or marijuana during the 30 days prior to being surveyed for the University of Michigan's Monitoring the Future study. The data can be described by the following mathematical models:

$$A = -n + 70$$

$$M = -0.5n + 28$$

where A is the percentage of seniors who used alcohol, M is the percentage of seniors who used marijuana and n is the number of years after 1980. Use this information to solve exercise 119.

- 119) a. Use the appropriate line graph to determine the percentage of seniors who used alcohol in 2000.
- b. Use the appropriate formula to determine the percentage of seniors who used alcohol in 2000. What do you observe?

- c. Use the appropriate line graph to estimate the percentage of seniors who used marijuana in 2000.

- d. Use the appropriate formula to determine the percentage of seniors who used marijuana in 2000. How does this compare with your estimate in part (c)?

- e. Write a formula that describes the ratio of the percentage of seniors who used marijuana to the percentage who used alcohol. Name this new mathematical model R , for ratio.