

Name _____

Perform the indicated multiplication.

$$1) -\frac{35}{36} \cdot \left(\frac{4}{7}\right)$$

$$2) -\frac{15}{16} \cdot \left(\frac{4}{5}\right)$$

$$3) -\frac{10}{27} \cdot \left(\frac{3}{5}\right)$$

$$4) -\frac{27}{40} \cdot \left(\frac{8}{9}\right)$$

$$5) \frac{1}{3}(-75)$$

$$6) \frac{7}{4} \cdot \left(-\frac{6}{5}\right)$$

$$7) \frac{24}{7} \cdot \left(-\frac{13}{5}\right)$$

$$8) -\frac{16}{49} \cdot \left(\frac{7}{8}\right)$$

$$9) -\frac{27}{16} \cdot \left(\frac{2}{9}\right)$$

$$10) \frac{1}{2}(-52)$$

$$11) \frac{1}{3}(-90)$$

$$12) \frac{1}{4}(-56)$$

$$13) \frac{1}{9}(-144)$$

$$14) \frac{1}{2}(-56)$$

$$15) \frac{8}{7} \cdot (-22)$$

$$16) \frac{13}{6} \cdot \left(-\frac{15}{8}\right)$$

$$17) \frac{8}{5} \cdot (-3)$$

$$18) \frac{7}{2} \cdot \left(-\frac{25}{4}\right)$$

Perform the indicated division or state that the expression is undefined.

$$19) 28 \div \left(-\frac{4}{3}\right)$$

$$20) 12 \div \left(-\frac{6}{5}\right)$$

$$21) 14 \div \left(-\frac{7}{2}\right)$$

$$22) 44 \div \left(-\frac{4}{3}\right)$$

$$23) -72 \div 8$$

$$24) -12 \div 6$$

$$25) 72 \div (-8)$$

$$26) -75 \div 3$$

$$27) 48 \div (-6)$$

$$28) 20 \div \left(-\frac{10}{3}\right)$$

$$29) -50 \div 5$$

Determine whether the given number is a solution of the equation.

$$30) -4m + 15 = -8m + 7; -2$$

$$31) 2(x + 5) = 9x - 15; -8$$

$$32) -4m + 20 = -8m + 8; -3$$

$$33) 3(x + 6) = 7x - 20; -6$$

$$34) -6m + 11 = -10m + 7; -1$$

$$35) 4(x + 4) = 8x - 15; -6$$

Simplify the algebraic expression, or state that the expression cannot be simplified.

$$36) 3x^8 + 2x^8$$

$$37) 6x^9 + 3x^9$$

$$38) 8x^4 - 6x^2$$

$$39) 2x^5 - 8x^2$$

Simplify the algebraic expression by removing parentheses and brackets.

$$40) 2[4(x + 4) - 5]$$

$$41) -3(10x + 8) + 10(4x + 8)$$

42) $-6(10x + 10) + 5(9x + 6)$

43) $(7y + 11) - (4y - 1)$

44) $(8y + 10) - (3y - 6)$

45) $2[4(x - 3) + 5]$

46) $2[3(x - 5) - 1]$

47) $3[7(x + 5) - 2]$

48) $3 - 7[1 - (3x + 1)]$

Solve.

49) If a rock falls from a height of 90 meters above the ground, the height H (in meters) after x seconds can be approximated using the formula $H = 90 - 4.9x^2$. What is the height of the rock after 2 seconds?

50) If a rock falls from a height of 40 meters above the ground, the height H (in meters) after x seconds can be approximated using the formula $H = 40 - 4.9x^2$. What is the height of the rock after 2 seconds?

51) If a rock falls from a height of 80 meters above the ground, the height H (in meters) after x seconds can be approximated using the formula $H = 80 - 4.9x^2$. What is the height of the rock after 3 seconds?

Solve.

52) The formula $C = \frac{5}{9}(F - 32)$ expresses the relationship between Fahrenheit temperature, F , and Celsius temperature, C . Use the formula to convert 68°F to its equivalent temperature on the Celsius scale, rounded to the nearest degree.

53) The formula $C = \frac{5}{9}(F - 32)$ expresses the relationship between Fahrenheit temperature, F , and Celsius temperature, C . Use the formula to convert 41°F to its equivalent temperature on the Celsius scale, rounded to the nearest degree.

54) The formula $C = \frac{5}{9}(F - 32)$ expresses the relationship between Fahrenheit temperature, F , and Celsius temperature, C . Use the formula to convert 59°F to its equivalent temperature on the Celsius scale, rounded to the nearest degree.

55) The winning times (in seconds) in a speed-skating event for men can be represented by the formula $T = 46.78 - 0.092x$, where x represents the year, with $x = 0$ corresponding to 1920. (For example in 1992, x would be $1992 - 1920 = 72$.) According to the formula, what was the winning time in 1954? Round to the nearest hundredth.

56) The winning times (in seconds) in a speed-skating event for men can be represented by the formula $T = 46.16 - 0.092x$, where x represents the year, with $x = 0$ corresponding to 1920. (For example in 1992, x would be $1992 - 1920 = 72$.) According to the formula, what was the winning time in 1967? Round to the nearest hundredth.

Answer Key

Testname: Q03PREP_1.7TO1.8V01

1) $-\frac{5}{9}$

2) $-\frac{3}{4}$

3) $-\frac{2}{9}$

4) $-\frac{3}{5}$

5) -25

6) $-\frac{21}{10}$

7) $-\frac{312}{35}$

8) $-\frac{2}{7}$

9) $-\frac{3}{8}$

10) -26

11) -30

12) -14

13) -16

14) -28

15) $-\frac{176}{7}$

16) $-\frac{65}{16}$

17) $-\frac{24}{5}$

18) $-\frac{175}{8}$

19) -21

20) -10

21) -4

22) -33

23) -9

24) -2

25) -9

26) -25

27) -8

28) -6

29) -10

30) solution

31) not a solution

32) solution

33) not a solution

34) solution

35) not a solution

Answer Key

Testname: Q03PREP_1.7TO1.8V01

36) $5x^8$

37) $9x^9$

38) cannot be simplified

39) cannot be simplified

40) $8x + 22$

41) $10x + 56$

42) $-15x - 30$

43) $3y + 12$

44) $5y + 16$

45) $8x - 14$

46) $6x - 32$

47) $21x + 99$

48) $21x + 3$

49) 70.4 m

50) 20.4 m

51) 35.9 m

52) 20°C

53) 5°C

54) 15°C

55) 43.65 sec

56) 41.84 sec