MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Simplify the fraction. If the fraction is already simplified, so state.

1) \( \frac{55}{77} \)

A) simplified   B) \( \frac{5}{7} \)   C) \( \frac{11}{7} \)   D) \( \frac{5}{11} \)

2) \( \frac{14}{5} \cdot \frac{1}{6} \)

A) \( \frac{67}{15} \)   B) \( \frac{64}{30} \)   C) \( \frac{7}{15} \)   D) \( \frac{5}{15} \)

Find the quotient. Simplify the answer.

3) \( \frac{5}{7} \div \frac{7}{2} \)

A) \( 4 \frac{9}{10} \)   B) \( \frac{2}{5} \)   C) \( 2 \frac{1}{2} \)   D) \( \frac{10}{49} \)

Add or subtract. Simplify the answer.

4) \( \frac{2}{35} - \frac{1}{25} \)

A) \( \frac{1}{175} \)   B) \( \frac{3}{875} \)   C) \( \frac{9}{175} \)   D) \( \frac{3}{175} \)

Evaluate.

5) \(-5.11 \)

A) 10.2   B) -5.1   C) 5.1   D) 0

Evaluate \( x^2, -x^2, \) and \((-x)^2\) for the following value of \( x \).

6) 2

A) \( x^2 = 4; -x^2 = 4; (-x)^2 = 4 \)   B) \( x^2 = 4; -x^2 = -4; (-x)^2 = 4 \)

Evaluate.

7) \( \frac{9^2 + (13 - 6)^2}{20 \div 4 - (3 + 1)} \)

A) 58   B) 3258   C) 130   D) 81

Evaluate the expression for the given value of the variable or variables.

8) \(-4w - w^2 + 3; \quad w = -2 \)

A) -9   B) 7   C) -1   D) 15
Solve the problem.

9) If the sales tax on an item is 4%, then the total cost, including sales tax, of an item costing $d$ dollars can be found by the expression $d + 0.04d$. Determine the total cost of a camera that costs $230. Round your answer to the nearest cent.

A) $241.50  
B) $322.00  
C) $239.20  
D) $236.90

Simplify.

10) $-10(6r + 7) + 10(10r + 8)$

A) $40r + 10  
B) $-130r  
C) $40r + 7  
D) $-4r - 3

Solve the equation.

11) $9x - (6x - 1) = 2$

A) $x = \frac{1}{3}  
B) $x = -\frac{1}{15}  
C) $x = -\frac{1}{3}  
D) $x = \frac{1}{15}

12) $\frac{f}{3} - 4 = 1$

A) $f = -15  
B) $f = -9  
C) $f = 15  
D) $f = 9

13) $-7x + 3(-2x - 4) = -23 - 2x$

A) $x = \frac{35}{11}  
B) $x = -1  
C) $x = \frac{7}{3}  
D) $x = 1

Solve the inequality and graph the solution on a number line.

14) $-9x \geq 63$

A) $x \geq 7  
B) $x \leq -7  
C) $x \leq -7  
D) $x \leq 7

Express the statement as an algebraic expression.

15) Twice the sum of a number and 50

A) $50(x + 2)  
B) $2(x + 50)  
C) $100 + x  
D) $2x + 50

Write the indicated expression.

16) Gina had a baby weighing $x$ pounds and $y$ ounces. Write an expression that represents the baby's weight in ounces.

A) $16x + y  
B) $16(x + y)  
C) $\frac{16}{x} + y  
D) $x + \frac{y}{16}$
Set up an equation that can be used to solve the problem. Solve the equation and answer the question asked.

17) The manager of a coffee shop has one type of coffee that sells for $6 per pound and another type that sells for $15 per pound. The manager wishes to mix 100 pounds of the $15 coffee to get a mixture that will sell for $10 per pound. How many pounds of the $6 coffee should be used?
   A) 225 pounds  B) 62.5 pounds  C) 112.5 pounds  D) 125 pounds

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Graph using the x- and y-intercepts.

18) \( y = -2x + 7 \)

19) \( 6y = 9x - 21 \)
Graph the equation.

20) \( x = -2 \)

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the slope of the line through the given points.

21) (6, 9) and (1, 6)
   A) \( m = \frac{5}{3} \)       B) \( m = -\frac{3}{5} \)       C) \( m = \frac{3}{5} \)       D) \( m = \frac{15}{7} \)

Determine the slope and \( y \)-intercept of the line represented by the given equation.

22) \( y = \frac{5}{6}x - \frac{5}{2} \)
   A) \( m = \frac{5}{6}; y \)-intercept is \((0, -\frac{5}{2})\)  
   B) \( m = \frac{6}{5}; y \)-intercept is \((0, \frac{5}{2})\)  
   C) \( m = -\frac{5}{2}; y \)-intercept is \((0, \frac{5}{6})\)  
   D) \( m = -\frac{5}{6}; y \)-intercept is \((0, \frac{5}{2})\)

Determine whether the pair of lines are parallel, perpendicular, or neither.

23) \( 3x - 4y = 18 \)
   \( 12x + 6y = 2 \)
   A) parallel  
   B) perpendicular  
   C) neither
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Graph the inequality.
24) \( x + 3y \geq 4 \)

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the solution to the system of equations.
25) \( x + 7y = -2 \)
\( 3x + y = 34 \)
A) \((-2, 3)\)  
B) \((7, 12)\)  
C) \((3, 7)\)  
D) \((12, -2)\)

Solve the problem.
26) A bank teller has both \$20 and \$10 bills in her cash drawer. There are 35 \$10 bills, and the total amount of all the bills is \$570. How many \$20 bills are there?
A) 11 \$20 bills  
B) 33 \$20 bills  
C) 13 \$20 bills  
D) 35 \$20 bills

Express the exercise as a system of linear equations, then find the solution. Use a calculator where appropriate.
27) Julie and Eric row their boat (at a constant speed) 55 miles downstream for 5 hours, helped by the current. Rowing at the same rate, the trip back against the current takes 11 hours. Find the rate of the current.
A) 2.5 mph  
B) 3 mph  
C) 8 mph  
D) 4 mph

Simplify.
28) \( x^{10} \cdot x^{-6} \)
A) \( x^{4} \)  
B) \(-60x \)  
C) \( x^{-60} \)  
D) \( x^{10} - x^{6} \)

29) \( \frac{x^{18}z^{24}}{-9y^{24}} \cdot (3x^{-6}y^{2}z^{-8})^{-3} \)
A) \( \frac{x^{18}z^{24}}{-9y^{24}} \)  
B) \( \frac{y^{11}}{-9x^{9}z^{11}} \)  
C) \( \frac{y^{11}}{27x^{9}z^{11}} \)  
D) \( \frac{x^{18}z^{24}}{27y^{24}} \)

Multiply.
30) \( \left( \frac{5x + \frac{1}{5}}{5x \cdot \frac{1}{5}} \right) \)
A) \( 25x^2 - \frac{2}{5} \)  
B) \( 25x^2 - \frac{1}{25} \)  
C) \( 25x^2 - \frac{2}{5}x - \frac{1}{25} \)  
D) \( 25x^2 - \frac{2}{5} \)
31) \((x + 5)^2\)
   A) \(x^2 + 10x + 25\)
   B) \(25x^2 + 10x + 25\)
   C) \(x^2 + 25\)
   D) \(x + 25\)

Divide.

32) \(\frac{x^2 - 4}{x + 2}\)
   A) \(x + 4\)
   B) \(x^2 - 2\)
   C) \(x - 4\)
   D) \(x - 2\)

Factor.

33) \(8x^2 - 6x + 12x - 9\)
   A) \((8x + 3)(x - 3)\)
   B) \((8x - 3)(x + 3)\)
   C) \((2x + 3)(4x - 3)\)
   D) \((2x - 3)(4x + 3)\)

Factor.

34) \(6x^2 + 13x + 6\)
   A) \((2x - 3)(3x + 2)\)
   B) \((2x + 3)(3x + 2)\)
   C) \((6x + 3)(x + 2)\)
   D) prime

Determine the value or values of the variable where the expression is defined.

35) \(\frac{7}{x - 4}\)
   A) all real numbers except \(x = -4\)
   B) all real numbers except \(x = 4\)
   C) all real numbers except \(x = 0\)
   D) all real numbers

Multiply.

36) \(\frac{3y}{5y + 3} \cdot \frac{10y + 5}{4}\)
   A) \(\frac{5y}{4}\)
   B) \(\frac{5}{4}\)
   C) \(\frac{3y}{4}\)
   D) \(\frac{5y}{12}\)

37) \(\frac{x^2 + 9x + 20}{x^2 + 6x + 8} \cdot \frac{x^2 + 10x + 16}{x^2 + 13x + 40}\)
   A) \(\frac{x + 2}{x + 8}\)
   B) \(\frac{1}{x + 8}\)
   C) \(\frac{x + 5}{x + 2}\)
   D) 1

Divide.

38) \(\frac{x^2 + 9x + 18}{x^2 + 11x + 24} \div \frac{x^2 + 6x}{x^2 + 13x + 40}\)
   A) \(\frac{x + 5}{x^2 + 8x}\)
   B) \(\frac{x}{x^2 + 11x + 24}\)
   C) \(x + 5\)
   D) \(\frac{x + 5}{x}\)

Add or subtract.

39) \(\frac{3}{y^2 - 3y + 2} + \frac{7}{y^2 - 1}\)
   A) \(\frac{11y - 10}{(y - 1)(y + 1)(y - 2)}\)
   B) \(\frac{42y - 11}{(y - 1)(y + 1)(y - 2)}\)
   C) \(\frac{10y - 11}{(y - 1)(y + 1)(y - 2)}\)
   D) \(\frac{10y - 11}{(y - 1)(y - 2)}\)
Simplify.
\[
\frac{\frac{5}{a} + 1}{\frac{5}{a} - 1}
\]

A) \(\frac{a^2}{5 - a^2}\)  
B) \(5 - a^2\)  
C) \(\frac{5 + a}{5 - a}\)  
D) \(5\)  

40) ______

Solve the equation and check your solution.
\[
\frac{x - 3}{x} = \frac{8}{x + 3}
\]

A) \(x = 9, x = -1\)  
B) \(x = 3, x = -1\)  
C) \(x = 9, x = 1\)  
D) \(x = 3, x = 1\)

41) ______

\[
\frac{x}{x - 1} - \frac{5}{x - 1} = \frac{1}{x - 1}
\]

A) \(x = 1\)  
B) \(x = 1, -1\)  
C) \(x = -1\)  
D) No solution

42) ______

Evaluate the square root.
\[
-\sqrt{\frac{25}{100}}
\]

A) \(-5\)  
B) \(-\frac{5}{10}\)  
C) \(\frac{5}{100}\)  
D) Not a real number

43) ______

Simplify.
\[
\sqrt[8]{x^8}
\]

A) \(x^6\)  
B) \(\frac{x^4}{2}\)  
C) \(x^{16}\)  
D) \(x^4\)

44) ______

\[
\sqrt[8]{x^4 y^5 z^6}
\]

A) \(x^2 y^2 z^3 \sqrt{y}\)  
B) \(x^2 y^2 z^4\)  
C) \(x^2 y^2 z^2 \sqrt{y^3}\)  
D) \(x^2 z^3 \sqrt{y^5}\)

45) ______

Simplify the expression.
\[-3\sqrt{5} - 6\sqrt{45}\]

A) \(6\sqrt{5}\)  
B) \(21\sqrt{5}\)  
C) \(-21\sqrt{5}\)  
D) \(-9\sqrt{5}\)

46) ______

Multiply.
\[4\sqrt{5}(\sqrt{11} + \sqrt{5})\]

A) \(4\sqrt{55} + 20\)  
B) \(4\sqrt{11} + 5\)  
C) \(20\sqrt{11} + 20\)  
D) \(4\sqrt{55} + 5\)

47) ______
Simplify the expression.

48) \( \frac{1}{\sqrt{3}} \)
   A) \( \frac{\sqrt{3}}{3} \)  
   B) \( \frac{1 + \sqrt{3}}{3} \)  
   C) \( 1 + \sqrt{3} \)  
   D) \( \sqrt{3} \)

49) \( \sqrt{\frac{396}{x^2}} \)
   A) \( \frac{\sqrt{396}}{x} \)  
   B) \( \frac{6\sqrt{11}}{x} \)  
   C) \( \sqrt{\frac{396}{x^2}} \)  
   D) \( \frac{66}{x} \)

Solve the problem and answer the question.

50) A painter can finish painting a house in 6 hours. Her assistant takes 8 hours to finish the same job. How long would it take for them to complete the job if they were working together?
   A) 7 hr  
   B) \( \frac{3}{7} \) hr  
   C) \( \frac{7}{24} \) hr  
   D) 5 hr
Answer Key
Testname: MATH 80 PRACTICE FINAL.

1) B
2) C
3) D
4) D
5) C
6) B
7) C
8) B
9) C
10) A
11) A
12) C
13) D
14) C
15) B
16) A
17) D
18)
Answer Key
Testname: MATH 80 PRACTICE FINAL

20)

21) C
22) A
23) C
24)

25) D
26) A
27) B
28) A
29) D
30) B
31) A
32) D
33) C
34) B
35) B
36) A
37) D
38) D
39) C
40) C
41) A
42) D
43) B
Answer Key
Testname: MATH 80 PRACTICE FINAL

44) D
45) A
46) C
47) A
48) A
49) B
50) B