Math 0306 - Departmental Exit Assessment Review (Instructor Version)

**Answer the question.**

1) What does the digit 5 mean in the number 189,547?
   
   **Answer:** 2 hundreds
   
   **Objective:** (1.1) Give Place Value of Digit

**Write the number in words.**

2) 5,700,032
   
   **Answer:** Five million, seven hundred thousand, thirty-two
   
   **Objective:** (1.1) Rewrite Number in Words

**Rewrite the following number using digits.**

3) Eight hundred twenty-eight thousand, four hundred sixty-three
   
   **Answer:** 828,463
   
   **Objective:** (1.1) Rewrite Number Using Digits

**If the number is negative, write it with a raised negative sign; if the number is positive, write it in two ways.**

4) The submarine dove to a depth of 202 feet below the surface of the water.
   
   **Answer:** -202 feet
   
   **Objective:** (1.1) Rewrite Number Using Digits

**Graph each set of numbers.**

5) 
   -1\(\frac{1}{2}\), 0, 5, -1\(\frac{1}{2}\)
   
   **Answer:**
   
   **Objective:** (1.2) Graph Signed Numbers on Number Line

**Write < or > between the pair of numbers to make the statement true.**

6) -5 ____ -1
   
   **A) <**
   
   **B) >**
   
   **Answer:** A
   
   **Objective:** (1.2) Write > or < to Make Statement True

**Find the absolute value.**

7) |9115|
   
   **Answer:** 9115
   
   **Objective:** (1.2) Find Absolute Value

**Add.**

8) -8 + 8
   
   **Answer:** 0
   
   **Objective:** (1.3) Add Two Integers

9) 17 + .9 + -15
   
   **Answer:** 7
   
   **Objective:** (1.3) Add Three or More Integers

**Write as an addition problem and find the sum.**

10) Jane lost 9 pounds the first week and gained 6 pounds the second week. What was her net gain or loss?
   
   **Answer:** -9 + 6 = -3 pounds
   
   **Objective:** (1.3) Solve Apps: Add Integers

**Add.**

11) -671 + 38 + -6147
   
   **Answer:** -6780
   
   **Objective:** (1.3) Add Integers with Large Absolute Value

**Find the opposite (additive inverse) of the number.**

12) -8
   
   **Answer:** 8
   
   **Objective:** (1.4) Find Opposite of Number

**Subtract.**

13) -20 - -12
   
   **Answer:** -8
   
   **Objective:** (1.4) Subtract Two Integers

**Simplify.**

14) 9 - 14 - 13 - 5
   
   **Answer:** -23
   
   **Objective:** (1.4) Add or Subtract Three or More Integers

15) 0 - |-1|
   
   **Answer:** -1
   
   **Objective:** (1.4) Simplify Expression with Grouping and Absolute Value
Round as indicated.  
16) 641 to the nearest thousand  
   Answer: 1000  
   Objective: (1.5) Round Positive Integer to Higher Place Values

Use front end rounding to round the number. 
17) Harold worked 228 hours overtime last year.  
   Answer: 200 hours  
   Objective: (1.5) Solve Apps: Round Number (Front End)

First, use front end rounding to estimate each answer. Then find the exact answer.  
18) -27 + -93  
   Answer: Estimate: -30 - 90 = -120  
   Exact: -27 - 93 = -120  
   Objective: (1.5) Use Front End Rounding to Estimate, Then Find Exact Answer

19) Pat had $953 in her checking account. If she wrote checks for $148 and $339, how much remained in her account?  
   Answer: estimate: $1000 - $100 - $300 = $600; exact: $466  
   Objective: (1.5) Solve Apps: Integer Sum or Difference (Front End)

Multiply.  
20) 22 · 0  
   Answer: 0  
   Objective: (1.6) Multiply Two Integers

21) -8 · -9 · -9  
   Answer: -648  
   Objective: (1.6) Multiply Three or More Integers

Rewrite using the stated property.  
22) Commutative property; 21 · 3  
   Answer: 3 · 21  
   Objective: (1.6) Apply Multiplication Properties

Simplify.  
23) -|9| · -4 · |3|  
   Answer: -108  
   Objective: (1.6) Simplify Expressions with Integers, Absolute Value

Solve the problem.  
24) There is a 3-degree drop in temperature for every thousand feet that an airplane climbs into the sky. If the temperature on the ground is 37 degrees, what will be the temperature when the plane reaches an altitude of 21,000 feet?  
   Answer: -26 degrees  
   Objective: (1.6) Solve Apps: Multi-Step Integer Problems

Divide.  
25) \(-\frac{24}{-3}\)  
   Answer: 8  
   Objective: (1.7) Divide Integers

Simplify.  
26) \(-7 \div 7 \cdot -42 \div 6\)  
   Answer: 7  
   Objective: (1.7) Simplify Expression with Multiplication and Division

First, use front end rounding to estimate each answer. Then find the exact answer.  
27) A lawsuit settlement of $1,155,000 is to be distributed among 21 claimants. How much will each claimant get?  
   Answer: estimate: $1,000,000 ÷ 20 = $50,000; exact: $1,155,000 ÷ 21 = $55,000  
   Objective: (1.7) Solve Apps: Four Operations (One Step)

Solve the problem.  
28) A travel agent arranged a payment plan for a client. It required a down payment of $150 and 12 monthly payments of $471. What was the total cost of the plan?  
   Answer: $5802  
   Objective: (1.7) Solve Apps: Four Operations (Several Steps)

Divide and then interpret the remainder.  
29) If each hotel room can hold 4 people, how many rooms are needed for 89 people?  
   Answer: 23 rooms with space left for 3 people  
   Objective: (1.7) Solve Apps: Interpret Remainder
Simplify.
30) \(-4 \cdot |56| \div 8 \cdot |9|
Answer: \(-252\)
Objective: (1.7) Simplify Expression with Absolute Value

31) \(-3^3\)
Answer: \(-27\)
Objective: (1.8) Evaluate Exponential Expression

32) \(7(5 + 9) - (7 - 7)\)
Answer: 28
Objective: (1.8) Use Order of Operations: No Exponents

33) \(-8(3^2) \cdot 3(5 - 3)\)
\(-3(4 - 5) \div -1\)
Answer: 26
Objective: (1.8) Use Order of Operations: Quotients

Identify the parts of each expression. Choose from these labels: variable, constant, and coefficient.

34) \(-14 + t\)
Answer: \(-14\) is a constant; \(t\) is a variable.
Objective: (2.1) Identify Variable/Constant Coefficient

Rewrite the given expression without exponents.
35) \(-9r^3y^2\)
Answer: \(-9 \cdot r \cdot r \cdot r \cdot y \cdot y\)
Objective: (2.1) Rewrite Variable Expression Without Exponents

Evaluate the given expression.
36) \(-5v^2t\) when \(v\) is 3 and \(t\) is -2.
Answer: 90
Objective: (2.1) Evaluate Variable Expression (Monomial)

Evaluate the expression.
37) \(\frac{z^2}{-2x + y}\); when \(x\) is 3, \(y\) is -1, and \(z\) is 4.
Answer: \(-16\)
Objective: (2.1) Evaluate Variable Expression (Absolute Value/Fraction)

Identify the like terms in the given expression. Then identify the coefficients of the like terms.

38) \(4x^2y + 10xy + -6xy^2 + 12x + 9xy + -5x^2y^3 + 12\)
Answer: Like Terms: \(10xy\) and \(9xy\)
Coefficients: 10 and 9
Objective: (2.2) Identify Like Terms and Coefficients

Simplify the given expression. Write the answer with variables in alphabetical order and any constant term last.
39) \(5xy^2 + 11xy + 15xy^2\)
Answer: \(20xy^2 + 11xy\)
Objective: (2.2) Combine Like Terms When Some are Like Terms

Simplify by using the associative property of multiplication.
40) \(6(-2p^2)\)
Answer: \(-12p^2\)
Objective: (2.2) Simplify Using Associative Property of Multiplication

Use the distributive property to simplify this expression.
41) \(9(z - 8)\)
Answer: \(9z - 72\)
Objective: (2.2) Use Distributive Property to Simplify Expression

Simplify the given expression.
42) \(5 - 3(5w - 4) + w\)
Answer: \(-14w + 17\)
Objective: (2.2) Use Distributive Property to Simplify Complex Expression
Select the solution of the given equation from the answer choices provided.

43) \( y + 5 = -25 \)
   A) \(-20\)          B) \(20\)          C) \(-30\)          D) \(30\)
   Answer: C
   Objective: (2.3) Select Solution of Equation from Answer Choices

Solve the given equation.

44) \(-15 = z + 4\)
   Answer: \(z = -19\)
   Objective: (2.3) Solve Equation Using Single Addition

Simplify each side of the equation, if possible. Then solve the equation.

45) \(-5k + 6k = 25 - 5 + 4\)
   Answer: \(k = 24\)
   Objective: (2.3) Simplify Each Side of Equation and Solve

Solve the problem.

46) The BBQ committee always orders one pound of ribs for each person who signs up for the Homecoming BBQ, plus 19 extra pounds of ribs. The committee ordered 120 pounds of ribs this year. Solving the equation \(n + 19 = 120\) will give the number of people who signed up for the BBQ. Solve the equation.
   Answer: \(n = 101\) people
   Objective: (2.3) Solve Apps: Solving Equations Using Addition

Solve the given equation.

47) \(-12k = 12\)
   Answer: \(k = -1\)
   Objective: (2.4) Solve Equation Using Single Division Step

Simplify where possible. Then solve the equation.

48) \(3 - 3 = 6f - 5f\)
   Answer: \(f = 0\)
   Objective: (2.4) Simplify, then Solve Using Division

Solve this equation.

49) \(-x = -47\)
   Answer: \(x = 47\)
   Objective: (2.4) Solve Equation by Dividing by (-1)

Solve the problem.

50) The perimeter of a square is 4 times the length of one side, \(s\). If the perimeter is 8 feet, solving the equation \(4s = 8\) will give the length of one side. Solve the equation.
   Answer: \(s = 2\) feet
   Objective: (2.4) Solve Apps: Solving Equations Using Division

Solve the equation.

51) \(4r + 11 = 11\)
   Answer: \(r = 0\)
   Objective: (2.5) Solve Equation Using Addition and Division Properties

Use the distributive property to help solve the given equation.

52) \(-10 = 5(y + 10)\)
   Answer: \(y = -12\)
   Objective: (2.5) Solve Equation Using Distributive Property

Find the perimeter of the given square or rectangle.

53) \[
\begin{array}{c}
22 \text{ ft} \\
\end{array}
\]
   Answer: \(88\) ft
   Objective: (3.1) Find Perimeter of Square or Rectangle: Figure

54) A square with side 7.9 in.
   Answer: \(31.6\) in.
   Objective: (3.1) Find Perimeter of Square or Rectangle: Verbal

For the given perimeter of the square, find the length of one side.

55) The perimeter is 20 miles.
   Answer: \(5\) miles
   Objective: (3.1) Find Side of Square Given Perimeter
Given the perimeter and either the length or width of a rectangle, find the unknown measurement by using the appropriate formula.

56) The perimeter of a rectangular yard is 270 feet and the width is 59 feet.
Answer: 76 feet
Objective: (3.1) Find Side of Rectangle Given Perimeter and Other Side

Find the perimeter.
57)  
\[
\begin{array}{c}
\text{9 mi} \\
\text{9 mi} \\
\text{9 mi}
\end{array}
\]
Answer: 27 mi
Objective: (3.1) Find Perimeter of Triangle

58) 
\[
\begin{array}{c}
\text{13 ft} \\
\text{13 ft} \\
\text{39 ft} \\
\text{13 ft} \\
\text{26 ft}
\end{array}
\]
Answer: 156 ft
Objective: (3.1) Find Perimeter of Irregular Figure

Find the length of the unlabeled side of the figure, given the perimeter and the length of all other sides.
59) Perimeter is 21 cm.

Find the area.
60) A rectangle measuring 6 yd by 25 yd.
Answer: 150 yd²
Objective: (3.2) Find Area of Square or Rectangle

61) 
\[
\begin{array}{c}
\text{3 cm} \\
\text{3 cm}
\end{array}
\]
Answer: 9 cm²
Objective: (3.2) Find Area of Parallelogram

Given the area of a rectangle and its specified length or width, use an appropriate formula to find the requested measurement.
62) The area of a rectangular vegetable garden is 40 yd², and the length is 8 yd. Find its width.
Answer: 5 yd
Objective: (3.2) Find Side of Rectangle Given Area and Other Side

Find both the perimeter (P) and the area (A) of the given figure.
63) 
\[
\begin{array}{c}
\text{5 in.}
\end{array}
\]
Answer: \( P = 20 \text{ in.}; A = 25 \text{ in.}² \)
Objective: (3.2) Find Perimeter and Area of Figure

Solve the problem. Round to the nearest hundredth, if necessary.
64) The perimeter of a rectangular room is 74 ft. The width is 18 ft. Find the length.
Answer: 19 ft
Objective: (3.2) Solve Apps: Perimeter and Area

Write an algebraic expression, using \( x \) as the variable.
65) 1.8 less than some number
Answer: \( x - 1.8 \)
Objective: (3.3) Write Algebraic Expression Using \( x \) as the Variable
Solve the problem.
66) The sum of 5 and four times a number is -31. Find the number.
Answer: -9
Objective: (3.3) Translate Sentence into an Equation and Solve

67) Junior high classes of 30 students each met in the cafeteria to take achievement tests. If exactly 8 students sat at each table and 30 tables were used, how many classes took the tests?
Answer: 8 classes
Objective: (3.3) Solve Apps: Find One Unknown Quantity

68) A baseball team played a total of 178 games last season. They had 18 fewer wins than losses. How may games did the team win?
Answer: 80 games
Objective: (3.4) Solve Apps: Find Two Unknown Quantities

69) Of 100 bicycles in a bike rack, 41 are mountain bikes. What fraction of the bicycles are mountain bikes?
Answer: \(\frac{41}{100}\)
Objective: (4.1) Solve Apps: Represent Situation with Fraction

Write a positive or negative fraction to describe the situation.
71) Roger cut the plywood board \(\frac{2}{9}\) in. too short to fit the opening.
Answer: \(-\frac{2}{9}\)
Objective: (4.1) Write Signed Fraction to Describe Situation

Find the absolute value.
72) \(\left| \frac{2}{9} \right|\)
Answer: \(\frac{2}{9}\)
Objective: (4.1) Find Absolute Value of Fraction

Rewrite the fraction as an equivalent fraction with the given denominator.
73) \(\frac{2}{8} = \frac{?}{48}\)
Answer: \(\frac{12}{48}\)
Objective: (4.1) Write Equivalent Fraction with Given Denominator

Identify the number as prime, composite, or neither.
74) 54
Answer: Composite
Objective: (4.2) Identify Number as Prime or Composite

Find the prime factorization of the number.
75) 154
Answer: 2 \cdot 7 \cdot 11
Objective: (4.2) Find Prime Factorization of Number

Write the fraction in lowest terms by using prime factorization.
76) \(\frac{19}{28}\)
Answer: \(\frac{19}{28}\)
Objective: (4.2) Write Fraction in Lowest Terms
Write your answer in lowest terms.

77) The Brown family traveled 100 miles on a trip this summer. 30 miles of their trip was by train. What fraction of the trip was by train?
   Answer: $\frac{3}{10}$

Objective: (4.2) Solve Apps: Write Fraction

Write the fraction in lowest terms.

78) $\frac{28p^5q r^8}{32p^4 q r^9}$
   Answer: $\frac{7p}{8r}$

Objective: (4.2) Write Fraction with Variables in Lowest Terms

Multiply. Write the product in lowest terms.

79) $\left(\frac{25}{29}\right) \cdot \left(\frac{3}{4}\right)$
   Answer: $\frac{75}{116}$

Objective: (4.3) Multiply Signed Fractions

Divide. Write the quotient in lowest terms.

80) $\frac{3}{14} \div \frac{1}{6}$
   Answer: $\frac{9}{7}$

Objective: (4.3) Divide Signed Fractions

Perform the indicated operation. Give the answer in lowest terms.

81) $\frac{3x^2}{4} \div \frac{x^3}{16}$
   Answer: $\frac{12}{x}$

Objective: (4.3) Multiply and Divide Signed Fractions and Expressions

Solve the problem.

82) A warehouse stores 485 different inventory items. $\frac{3}{5}$ of these items are perishable. How many of the inventory items are perishable?
   Answer: 291 items

Objective: (4.3) Solve Apps: Multiply and Divide Fractions

Find the sum or difference. Write the answer in lowest terms.

83) $-1 - \left(\frac{8}{5}\right)$
   Answer: $-\frac{13}{5}$

Objective: (4.4) Add or Subtract Signed Fractions

84) $\frac{10}{7x^2} - \frac{7}{7x^2}$
   Answer: $\frac{3}{7x^2}$

Objective: (4.4) Add or Subtract Rational Expressions

Solve the problem.

85) Mrs. Montoya installed $\frac{1}{6}$-inch roofing shingles on top of a $\frac{1}{8}$-inch vapor barrier.

What was the combined thickness of the two materials?
   Answer: $\frac{1}{4}$ inch

Objective: (4.4) Solve Apps: Add or Subtract Fractions

Graph the numbers on the number line.

86) $2\frac{2}{3}$ and $-2\frac{2}{3}$
   Answer:

Objective: (4.5) Graph Mixed Number or Improper Fraction on Number Line

Write the mixed number as an improper fraction.

87) $-13\frac{1}{10}$
   Answer: $-\frac{131}{10}$

Objective: (4.5) Write Mixed Number as Improper Fraction
Write the improper fraction as a mixed number in simplest form.

88) \( \frac{26}{8} \)

Answer: \( 3 \frac{1}{4} \)

Objective: (4.5) Write Improper Fraction as Mixed Number

First, round the mixed numbers to the nearest whole number and estimate the answer. Then find the exact answer and write it in simplest form.

89) \( \frac{5}{6} + 5 \frac{1}{3} \)

Answer: \( 1 \frac{3}{32} \)

Objective: (4.5) Multiply or Divide Mixed Numbers

90) \( 20 \frac{3}{7} \cdot \frac{6}{7} \)

Answer: \( 19 \frac{4}{7} \)

Objective: (4.5) Add or Subtract Mixed Numbers

Solve the problem.

91) To obtain a certain shade of paint, Peter mixed 4 gallons of white paint with \( 2 \frac{3}{8} \) gallons of brown and \( 2 \frac{2}{9} \) gallons of blue paint. How much paint did he have?

Answer: \( 8 \frac{43}{72} \text{ gal} \)

Objective: (4.5) Solve Apps: Fractions and Mixed Numbers

Simplify.

92) \( \left( \frac{5}{3} \right)^3 \)

Answer: \( 4 \frac{17}{27} \)

Objective: (4.6) Use Exponents with Fractions

93) \( \frac{1}{5} \div \frac{1}{2} \cdot \frac{1}{2} \)

Answer: \( \frac{1}{5} \)

Objective: (4.6) Simplify Using Order of Operations (Fractions)

Solve the problem.

94) Linda sewed square buttons on her jacket that were \( \frac{1}{11} \) in. on each side. Find the area of one button using the formula \( A = s^2 \).

Answer: \( \frac{1}{121} \text{ in.}^2 \)

Objective: (4.6) Solve Apps: Find Area and Perimeter (Fractions)

Simplify.

95)

\[
\frac{1}{16} - \frac{7}{20}
\]

Answer: \( \frac{5}{28} \)

Objective: (4.6) Simplify Complex Fraction

Solve the equation.

96) \( \frac{8}{5}y = -\frac{16}{9} \)

Answer: \( \frac{10}{9} \)

Objective: (4.7) Solve Equation Containing Fractions

Solve the problem.

97) The weekly output goal of ABCD Co. is given by the expression: \( 100 + \frac{x}{4} \), where \( x \) is the input in pieces. The output goal for next week is 212. What is the input in pieces?

Answer: 448 pieces

Objective: (4.7) Solve Apps: Fractions
Find the area.

98) \[
\begin{array}{c}
\text{37 m} \\
\text{32 m} \\
\text{21 m}
\end{array}
\]

Answer: 336 in.²

Objective: (4.8) Find Area of Triangle

Find the perimeter of the shaded triangle.

99) \[
\begin{array}{c}
\text{6 3/4 yd} \\
\text{11 7/10 yd} \\
\text{9 yd}
\end{array}
\]

Answer: 27 9/20 yd

Objective: (4.8) Find Perimeter of Triangle

Find the volume.

100) \[
\begin{array}{c}
\text{2 ft} \\
\text{23/2 ft} \\
\text{22/3 ft}
\end{array}
\]

Answer: 168 2/3 ft³

Objective: (4.8) Find Volume of Rectangular Solid or Pyramid

Identify the digit with the given place value.

101) 0.11235 hundredths
Answer: 1

Objective: (5.1) Identify Digit With Given Place Value

Write the decimal as a fraction or mixed number in lowest terms.

102) 0.5

Answer: 1/2

Objective: (5.1) Write Decimal as a Fraction

Write the decimal in numbers.

103) Fifty six hundredths

Answer: 0.56

Objective: (5.1) Given Words, Write Decimal in Numbers

Round the number to the place indicated.

104) Round to the nearest thousandth: 1.1163

Answer: 1.116

Objective: (5.2) Round Decimal to Indicated Place

In order to prepare her budget, Sue gathers receipts for all major expenses she has had over the last month. Round the figure to the nearest dollar.

105) Groceries, $689.03

Answer: $689

Objective: (5.2) Round Monetary Amount to Nearest Dollar

Find the sum.

106) 48.2 + 9.466 + 1.263 + 6.87

Answer: 65.799

Objective: (5.3) Add Decimals Horizontally

Subtract the following numbers.

107) 6.960 - 5.180

Answer: 1.780

Objective: (5.3) Subtract Decimals Horizontally

Solve the problem.

108) Van's subtotal at Scramble's Electronics is $14.91. The sales tax on these items is $1.83. What is Van's total bill?

Answer: $16.74

Objective: (5.3) Solve Apps: Add or Subtract Decimals

Perform the indicated operation.

109) -2.083 + (-6.395)

Answer: -8.478

Objective: (5.3) Add or Subtract Signed Decimals

Add or subtract as indicated.

110) -180 - (-0.6013 + 0.1)

Answer: -179.4987

Objective: (5.3) Add or Subtract Three Signed Decimals
First, use front-end rounding to round each number and estimate the answer. Then, find the exact answer.

111) Ray’s gross pay is $295.48 per week. $53.57 is withheld for federal income tax, $26.60 for FICA tax, and $10.08 for other deductions. Find his net pay.
Answer: Estimate: $210; exact: $205.23
Objective: (5.3) Solve Apps: Estimate and Add/Subtract Decimals

Multiply.

112) (-1.4)(-19.8)
Answer: 27.72
Objective: (5.4) Multiply Signed Decimals

First use front end rounding to estimate the answer. Then multiply to find the exact answer.

estimate exact
113) \( \times 3.6 \times 1.8 \)

Answer: Estimate: 8; exact: 6.48
Objective: (5.4) Use Front End Rounding to Estimate

Solve the problem.

114) A certain person burns 7.8 calories per minute while walking. How many calories will be burned if that person walks for 3 hours?
Answer: 1404 calories
Objective: (5.4) Solve Apps: Multiply Decimals

Find the exact answer.

115) At SuperStop, gasoline costs $1.31 per gallon when you pay with a credit card and $0.08 per gallon less when you pay with cash. How much do you save by filling up a 13-gallon tank if you are paying cash?
Answer: $1.04
Objective: (5.4) Solve Apps: Several Steps

Divide.

116) \( \frac{8.01}{9} \)

Answer: 0.89
Objective: (5.5) Divide Signed Decimals

Perform the indicated operation and round as indicated.

117) \( \frac{-129.183}{11} \) hundredths
Answer: -11.74
Objective: (5.5) Divide and Round Quotient as Requested

Solve the problem.

118) The water in a tank weighs 115.62 lb. One cubic foot of water weighs 62.5 lb. How many cubic feet of water are in the tank?
Answer: 1.84992 cubic feet
Objective: (5.5) Solve Apps: Divide Decimals

Perform the indicated operations and simplify.

119) \( 8.8^2 + 8.9^2 \)
Answer: 156.65
Objective: (5.5) Simplify Using Order of Operations

Write the fraction or mixed number as a decimal. Round to the nearest thousandth if necessary.

120) \( \frac{70.15}{37} \)

Answer: 70.405
Objective: (5.6) Write Fraction or Mixed Number as Decimal

Write the decimal as a fraction or mixed number in lowest terms.

121) 1.01

Answer: \( 1 - \frac{1}{100} \)
Objective: (5.6) Write Decimal as Fraction

Solve the problem.

122) A farmer is supposed to add 5.9 grams of supplement to the feed mix for his chickens. Instead, he adds 5.09 grams of supplement. Did he add too much or too little? What was the difference?
Answer: Too little; 0.81 grams
Objective: (5.6) Solve Apps: Fractions as Decimals

Arrange in order from smallest to largest.

123) 0.084, 0.048, 0.044, 0.088
Answer: 0.044, 0.048, 0.084, 0.088
Objective: (5.6) Arrange Decimals and Fractions in Order
Find the square root. When necessary, round to nearest thousandth.
124) $\sqrt{14}$
Answer: 3.742
Objective: (5.8) Find Square Root

Find the unknown length in the right triangle. If necessary, round to the nearest tenth.
125)

\[ \begin{align*}
20 \text{ ft} & \quad 25 \text{ ft} \\
? & \\
17 \text{ ft}
\end{align*} \]

Answer: 15 ft
Objective: (5.8) Find Unknown Length of Right Triangle

Solve the problem. Round to the nearest tenth, if necessary.
126) A painter leans a ladder against one wall of a house. At what height does the ladder touch the wall?

\[ \begin{align*}
? & \quad 20 \text{ ft} \\
17 \text{ ft}
\end{align*} \]

Answer: 10.5 ft
Objective: (5.8) Solve Apps: Pythagorean Theorem

Solve the equation and check your solution.
127) $-2.2 = -6.2 + x$
Answer: 4.0
Objective: (5.9) Solve Decimal Equation Using Addition Property

128) $-3.7m = -25.9$
Answer: 7
Objective: (5.9) Solve Decimal Equation Using Division Property

Solve the equation.
129) $7.3x - 12.8x = -71.5$
Answer: 13
Objective: (5.9) Solve Decimal Equation Using Addition and Division

Solve the problem.
130) A storage company rents their 10’ x 10’ space for $72.2 per month. They have a smaller 5’ x 7’ space available for 0.6 times the cost of the larger unit. What is the rental cost of the smaller space (round to the nearest cent)?
Answer: $43.32
Objective: (5.9) Solve Apps: Solve Equation Containing Decimals

Find the radius or diameter as requested.
131) Find the diameter.

\[ \begin{align*}
1.7 \text{ cm}
\end{align*} \]

Answer: 3.4 cm
Objective: (5.10) Find Radius or Diameter of Circle

Find the circumference and area of the circle. Round your results to the nearest tenth. (Use 3.14 for $\pi$)
132)

\[ \begin{align*}
4.8 \text{ mi}
\end{align*} \]

Answer: $C=15.1$ mi, $A=18.1$ m$^2$
Objective: (5.10) Find Circumference, Area of Circle from Figure

Find the circumference and area of a circle having the given diameter or radius. Round your results to the nearest tenth.
133) $r = 1.8$ ft
Answer: $C=11.3$ ft, $A=10.2$ ft$^2$
Objective: (5.10) Find Circumference, Area of Circle

Write the ratio as a fraction in lowest terms.
134) 26 cents to 36 cents
Answer: $\frac{13}{18}$
Objective: (6.1) Write Ratio as Fraction
Write the ratio as a fraction in lowest terms. Be sure to make all necessary conversions.

135) 10 cents to $6
Answer: \( \frac{1}{60} \)

Objective: (6.1) Convert Measurement and Write as Fraction

Solve the problem. Write ratios in lowest terms.

136) Jim's house is built on a \( \frac{3}{4} \) acre plot of land.
Jane's house sits on a 5-acre piece of land.
Find the ratio of the size of Jim's land to the size of Jane's land.
Answer: \( \frac{19}{20} \)

Objective: (6.1) Solve Apps: Find Ratio

Write the following as a rate in lowest terms.

137) 15 cars for 45 people
Answer: \( \frac{1 \text{ car}}{3 \text{ people}} \)

Objective: (6.2) Write Rate as Fraction in Lowest Terms

Find the unit rate.

138) 9 cents for 3 marbles
Answer: 3 cents/marble

Objective: (6.2) Find the Unit Rate

Find the best buy (based on cost per unit).

139) Brand A: 20 oz for $8.80
Brand B: 25 oz for $12.00
Answer: Brand A

Objective: (6.2) Find the Best Buy

Solve the problem.

140) David's net pay for a week at the video store was $68.68. If he worked 17 hours that week, what was his net pay rate?
Answer: $4.04/hour

Objective: (6.2) Solve Apps: Rates

Write the following proportions.

141) $20 is to 15 bottles as $16 is to 12 bottles
Answer: \( \frac{20}{15 \text{ bottles}} = \frac{16}{12 \text{ bottles}} \)

Objective: (6.3) Write as a Proportion

Find the unknown number in the proportion. Round answer to the nearest hundredth when necessary.

142) \( \frac{10}{x} = \frac{31}{45} \)

Answer: 14.52

Objective: (6.3) Solve Proportion

Find the unknown number in the proportion. Write your answer as a whole number or a mixed number if possible.

143) \( \frac{1}{3} = \frac{x}{8 \frac{1}{9}} \)

Answer: \( 2\frac{19}{27} \)

Objective: (6.3) Solve Proportion (Fractions/Mixed Numbers)

Use a proportion to solve the problem.

144) If a computer prints 189 lines in 4 seconds, how many lines can it print per minute?
Answer: 2835 lines

Objective: (6.4) Solve Apps: Proportions I

Find the perimeter of the specified triangle. Assume the triangles are similar.

145) Find the perimeter of the triangle on the left.
Answer: 78 ft

Objective: (6.6) Find Perimeter Given Pair of Similar Triangles
**Solve the problem.**

146) Raul, who is 1.72 m tall, wishes to find the height of a tree with a shadow 33.95 m long. He walks 21.87 m from the base of the tree along the shadow of the tree until his head is in a position where the tip of his shadow exactly overlaps the end of the tree top’s shadow. How tall is the tree? Round to the nearest hundredth.

Answer: 4.83 m

Objective: (6.6) Solve Apps: Similar Triangles

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**Write percents as decimals and decimals as percents.**

149) At a certain company 29.2% of the employees have engineering degrees.

Answer: 0.292

Objective: (7.1) Convert Between Decimal and Percent Notation

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**Use the percent proportion to answer the question. Round your answer to the nearest tenth of a percent, if necessary.**

150) $18.19 is what percent of $651.06?

Answer: 2.8%

Objective: (7.2) Use Percent Proportion to Find the Percent

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**Write and solve an equation to answer the question. Round your answer to the nearest hundredth, if necessary.**

151) What is 140% of 8030 weight loss programs?

Answer: 11,242

Objective: (7.3) Use Percent Equation to Find the Whole

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**Write and solve an equation to answer the question. Round percent to the nearest thousandth, if necessary.**

153) The First Nations Bank pays $6\frac{3}{4}$% interest per year on non-checking accounts. What is the annual income on a non-checking account of $80,000? Round to the nearest dollar.

Answer: $5400

Objective: (7.4) Solve Apps: Use Percent Equation

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**Use the properties of parallel lines to solve the problem.**

147) Line p is parallel to line q. If $\angle 8$ measures 49°, find the measure of each angle.

Answer: $\angle 2$, $\angle 4$, $\angle 6$ all measure 49°; $\angle 1$, $\angle 3$, $\angle 5$, $\angle 7$ all measure 131°

Objective: (6.5) Use Properties of Parallel Lines to Find Angles

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**Write the fraction as a percent. Round to the nearest tenth of a percent if necessary.**

148) $\frac{36}{100}$

Answer: 36%

Objective: (7.1) Write Fraction as Percent
Write and solve an equation to find the percent increase or decrease. Round your answer to the nearest tenth of a percent, if necessary.

154) Last year, Maria earned $327 per week. This year, her salary increased to $347 per week. What is the percent of increase?
   Answer: 6.1%
   Objective: (7.4) Solve Apps: Find Percent Increase/Decrease

Find the amount of the sales tax or the tax rate and the total cost. Round money answers to the nearest cent.

155) Cost of item: $160  Tax rate: 8 1/2%
   Answer: $13.60, $173.60
   Objective: (7.5) Find Sales Tax and Total Cost

Solve the problem.

156) Bathing suits are often on sale in July. The regular price of one suit is $21. With a 15% discount, what is the sale price of the suit?
   Answer: $17.85
   Objective: (7.5) Solve Apps: Discount

157) Robert Hall opened a taxi service company. To pay for startup costs, Robert Hall borrowed $58,000 from a bank at 6% for 1 year. Find the interest.
   Answer: $3480.00
   Objective: (7.5) Solve Apps: Simple Interest