Self-assessment 0950 (Pre Algebra)

If you can work these problems without using a calculator, you should have sufficient knowledge to demonstrate mastery of Prealgebra and to succeed in a subsequent course.

Simplify.

1) $-|-5|$ 1) _____

Evaluate.

2) Evaluate $-a+b+(-2)$ for $a=-19$ and $b=14$. 2) _____

Perform the necessary operations.

3) $14-0-13-(-3)+(-12)$ 3) _____

Evaluate.

4) -7^2 4) _____

5) Evaluate $\frac{-x}{-y}$ for $x=-45$ and $y=9$. 5) _____

Simplify.

6) $\frac{20(-1)-(-5)(-5)}{2[-8\div(-2-2)]}$ 6) _____

7) $14-3(7-2^2)+2$ 7) _____

Solve the problem.

8) During a storm in Anchorage, Alaska, the temperature was 6°F at noon. Then it dropped 3°F each hour for the next 2 hours, followed by an additional drop of 5°F the third hour. What was the temperature at 3 P.M.? 8) _____

Use the commutative and/or associative property of addition and then simplify.

9) $7+(n+6)+7$ 9) _____

Solve the equation and check your solution.

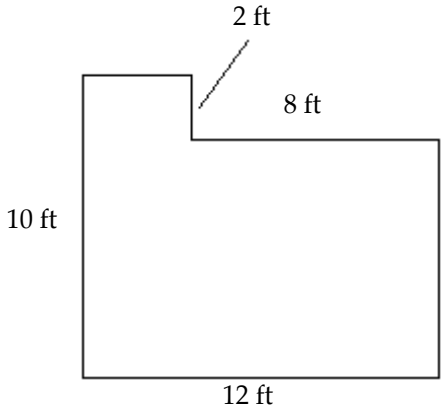
10) $3(7x)=-210$ 10) _____

Solve.

11) The length of a rectangle is four times the width. If the perimeter of the rectangle is 110 feet, find the width. 11) _____

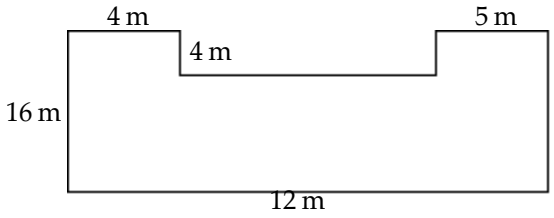
Find the perimeter of the figure.

12) 12) _____



Solve.

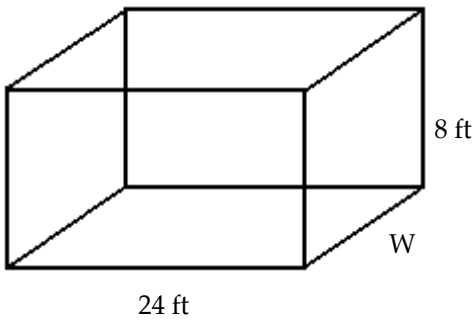
13) Find the area of the following shape. 13) _____



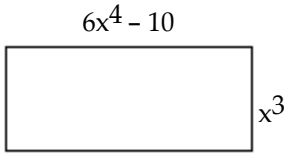
14) Find the area of a parallelogram with a base = 21 feet and height = 15 feet. 14) _____

15) Find the unknown side. 15) _____

$V = 576\ ft^3$



16) Write the area of the following rectangle as an algebraic expression and then simplify. 16) _____



17) A drapery panel measures 5 feet by 8 feet. How many square feet of material are needed for eight panels? 17) _____

Multiply. Leave your answer in exponent form.

18) $(-9p^4)(-6p^2)$ 18) _____

Use the power rules for exponents to simplify. Write the answer in exponential form.

19) $(5^3)^2$ 19) _____

Multiply.

20) $3(8)(y \cdot 4)$ 20) _____

Translate using numbers and symbols.

21) Nine times the sum of y and three 21) _____

Use the distributive property to simplify.

22) $3(y+6)+2$ 22) _____

Translate into an equation, and then solve the equation.

23) Five subtracted from what number equals one? 23) _____

Express as a product of prime factors.

24) 7425 24) _____

Divide, if possible.

25) $\frac{0}{18}$ 25) _____

Change to a mixed number or a whole number.

26) $\frac{50}{3}$ 26) _____

Simplify.

27) $\frac{12x^9y^3}{108x^4y^5}$ 27) _____

Solve.

28) Find the value of x. $\frac{2}{9} = \frac{7}{x}$ 28) _____

29) Andrea exercised for 23 minutes and burned 69 calories. How many calories did she burn per minute? 29) _____

Find the least common multiple (LCM) of the given expressions.

30) $2a, 11a^4, a^3$ 30) _____

Perform the operation indicated.

31) $\frac{2x^2}{4} \div \frac{x^3}{28}$ 31) _____

Add or subtract. Simplify all answers. Express as a mixed number.

32) $10 - 7\frac{3}{7}$ 32) _____

Perform the operation indicated.

33) $\frac{7z}{8} + \frac{8}{9}$ 33) _____

34) $(-16) \cdot 2\frac{5}{8}$ 34) _____

Simplify.

35) $2 + \left(\frac{4}{3}\right)^2 - \frac{5}{9}$ 35) _____

36) $\dfrac{\frac{1}{6} + \frac{1}{12}}{\frac{1}{6} - \frac{1}{12}}$ 36) _____

Solve.

37) $\frac{x}{-5} = 3 + 2^2$ 37) _____

38) Jody is using a recipe that calls for $\frac{3}{8}$ cup of milk per batch. If she has $7\frac{1}{8}$ cups of milk available, how many batches can she make? 38) _____

39) Robert and Paul each took some chips from a bag of potato chips which contains $10\frac{1}{2}$ ounces of chips. Robert took $3\frac{1}{3}$ ounces of chips and Paul took $3\frac{5}{6}$ ounces of chips. How many ounces of chips were left in the bag? 39) _____

40) The ratio of a basketball player's completed free throws to attempted free throws is 9 to 10. If she completed 27 free throws, find how many free throws she attempted. Round to the nearest whole number if necessary. 40) _____

Find the GCF.

41) 9, 21, 27 41) _____

Perform the operations indicated.

42) $(-3m^2 - 2m - 1) - (3m^2 + 2m + 2)$ 42) _____

Define the variable expression using the given information.

43) The second angle of a triangle is 14° smaller than the first. The third angle is triple the size of the first angle. Define the variable expressions for the second and third angles using the variable x to represent the first angle. 43) _____

Solve.

44) $5x + 3(6x - 2) = 4 - (6x - 4)$ 44) _____

45) $-4x + \frac{1}{3} = \frac{1}{2}$ 45) _____

Write as a fraction.

46) 0.024 46) _____

Combine like terms.

47) $19.1x + 14.3y - 10.6x - 20.5y$ 47) _____

Provide an appropriate response.

48) Write $\frac{4}{15}$ as a decimal. 48) _____

Perform the operation indicated.

49) $(7.22)(8.7)$ 49) _____

50) $(-9.6) - (-6.4)$ 50) _____

Solve.

51) $4(x - 1.7) = 9.3$ 51) _____

Provide an appropriate response.

52) Write the equivalent decimal and percent for $\frac{7}{250}$. 52) _____

53) Write the equivalent fraction and percent for 0.4. 53) _____

54) 0.2 is what percent of 20? 54) _____

55) What is 89% of 115? 55) _____

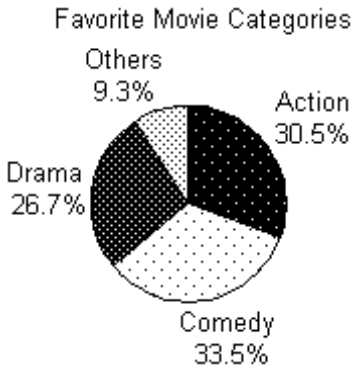
Solve.

56) When Milo got promoted at work, he received a 25% pay raise. He now earns $32,500 per year. What was his annual salary before his raise? 56) _____

57) How much commission will an agent make on the sale of a $757,500 house if he receives 1.4% of the selling price? 57) _____

58) Find the interest on a loan of $290 at a simple interest rate of 9% for 4 years. 58) _____

The circle graph summarizes the results of a survey of the favorite movie category chosen by a group of adults.



59) If 2200 adults responded to the survey, how many said that they favor comedies? Round to the nearest whole number. 59) _____

Convert the following.

60) 7 yards to inches 60) _____

61) On a road trip, Jackie and Meredith drove 412 miles through the United States and 185 kilometers through Canada. How many kilometers did they travel in total? 61) _____

Simplify.

62) $\sqrt{\frac{36}{49}}$ 62) _____

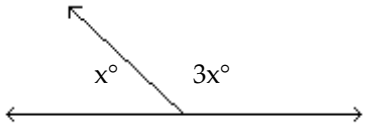
Solve. Use $\pi = 3.14$ and round your answer to the nearest hundredth.

63) A water sprinkler sends water out in a circular pattern. Determine how large an area is watered if the radius of watering is 8 ft. 63) _____

64) Bob's truck has tires with a radius of 23 inches. How many feet does his truck travel if the wheel makes 3 revolutions? 64) _____

Find the measure of each marked angle.

65) 65) _____



1) -5
2) 31
3) -8
4) -49
5) -5
6) -11.25
7) 7
8) $-5°F$
9) $n + 20$
10) $x = -10$
11) 11 ft
12) 44 ft
13) $180\ m^2$
14) $315\ ft^2$
15) $W = 3$ ft
16) $A = 6x^7 - 10x^3$
17) $320\ ft^2$
18) $54p^6$
19) 5^6
20) $96y$
21) $9(y + 3)$
22) $3y + 20$
23) $x - 5 = 1; 6$
24) $3^3 \cdot 5^2 \cdot 11$
25) 0
26) $16\frac{2}{3}$
27) $\frac{x^5}{9y^2}$
28) $31\frac{1}{2}$
29) 3 cal per min
30) $22a^4$
31) $\frac{14}{x}$
32) $2\frac{4}{7}$
33) $\frac{63z + 64}{72}$
34) -42
35) $\frac{29}{9}$
36) 3
37) $x = -35$

38) 19 batches

39) $3\frac{1}{3}$ ounces

40) 30 free throws

41) 3

42) $-6m^2 - 4m - 3$

43) $x - 14$ = second angle; $3x$ = third angle

44) $x = \frac{14}{29}$

45) $x = -\frac{1}{24}$

46) $\frac{3}{125}$

47) $8.5x - 6.2y$

48) $0.2\overline{6}$

49) 62.814

50) –3.2

51) 4.025

52) 0.028; 2.8%

53) $\frac{2}{5}$; 40%

54) 1%

55) 102.35

56) $26,000

57) $10,605.00

58) $104.40

59) 737 respondents

60) 252 in.

61) 848.32 km

62) $\frac{6}{7}$

63) 200.96 ft^2

64) 36.11 ft

65) 45° and 135°