Math 0306 Departmental Final Exam-Review

Simplify.

1) $4911 \div 42$

Answer: 116 R 39

2) $37 \div 1$

Answer: 37

3) $0 \div 13$

Answer: 0

4) $22 \div 0$

Answer: undefined

5) $9073 \cdot 1000$

Answer: 9,073,000

6) $(7^2 - 2) \cdot 8$

Answer: 376

7) $2[(8 - 5)^2 + (17 - 16)^2] + 12$

Answer: 32

8) Round 35,681 to the nearest thousand.

Answer: 36,000

Estimate the sum or difference by rounding each number to the nearest hundred.

9) 5112 + 7651 + 3877

Answer: 16,700

10) 7979 - 2242

Answer: 5800

11) Add whole numbers.

$$\begin{array}{r} 35{,}339{,}244 \\ 9{,}285{,}106 \\ 966{,}523 \\ +\ 9{,}527{,}231 \\ \hline \end{array}$$

Answer: 55,118,104

Solve.

12) The seats in a lecture hall are arranged in 22 rows with 6 seats in each row. How many seats are in this lecture hall?

Answer: 132 seats

13) In preparation for his new job, Kevin bought two suits at $189 a piece, four shirts at $22 a piece, two pairs of shoes at $70 a piece, and four ties at $22 a piece. What was the total cost of these items?

Answer: $694

14) Janet has a total of $2905 in her checking account. If she writes a check for each of the items below, how much money will be left in her account?

phone	$ 48
rent	$750
car	$429

Answer: $1678

15) If fencing costs $6 per foot, find the total cost for fencing a rectangular garden 15 ft by 31 ft.

Answer: $552

16) Add or subtract as indicated. $1 + (-14) - 3 - (-2) + 20$

Answer: 6

17) Estimate the sum of the four integers by rounding each number to the nearest hundred.

- 5263
+ 7649
- 1446
+ 3951

Answer: 4900

Simplify.

18) $8[-2 + 3(-8 + 6)]$

Answer: -64

19) $(3 - 7)^2 \cdot (6 - 4)^3$

Answer: 128

20) $-4(4 - 6)^2 - 3(2 - 4)^3$

Answer: 8

21) $8 \cdot 8^2 - 8(4 + 3) - (-4)$

Answer: 460

Simplify the expression.

22) $-(3y - 2z + 3)$

Answer: $-3y + 2z - 3$

23) $3(3x - 2) - 7x$

Answer: $2x - 6$

24) $-2(3y + 4) - 4$

Answer: $-6y - 12$

25) $-4(6r + 5) + 4(8r + 10)$

Answer: $8r + 20$

26) To which of the following equation, is -7 a solution ?

A) $4x - 9 = 6x + 4$
B) $5x + 3 = 7x + 16$
C) $10 - 3x = 15 - 2x$
D) $2x - 11 = 4x + 3$

Answer: D

Solve the equation.

27) $2x = -6$

Answer: -3

28) $-9x = -72$

Answer: 8

29) $\frac{1}{4}y = -8$

Answer: -32

30) $-4x + 2 - 8x - 10 = 9$

Answer: $-\frac{17}{12}$

31) $8x - (2x - 1) = 2$

Answer: $\frac{1}{6}$

32) $-9x + 5(-2x - 5) = -35 - 9x$

Answer: 1

33) $(y - 7) - (y + 3) = 3y$

Answer: $-\frac{10}{3}$

34) Maggie bought 18 packages of paper plates for a party of 94 people. Each person used one plate, and 8 plates were used for serving. At the end of the party she was left with 258 plates. How many plates were there in each package?

Answer: 20 plates

Write the fraction in simplest form.

35) $\frac{18}{30}$

Answer: $\frac{3}{5}$

Add or subtract as indicated. Write the answer in simplest form.

36) $\frac{1}{6} + \frac{2}{7}$

Answer: $\frac{19}{42}$

37) $\frac{2}{9} + \frac{3}{5}$

Answer: $\frac{37}{45}$

38) $\frac{1}{9} - \frac{1}{11}$

Answer: $\frac{2}{99}$

Simplify.

39) $\frac{1}{3} + \frac{1}{2} \cdot \frac{1}{9}$

Answer: $\frac{7}{18}$

Add or subtract as indicated. Write the answer as a mixed number in simplest form.

40) $20\frac{1}{5} + 8\frac{2}{3}$

Answer: $28\frac{13}{15}$

41) $29\frac{2}{9} + 12\frac{7}{27}$

Answer: $41\frac{13}{27}$

42) $15\frac{1}{2} + 4\frac{1}{4}$

Answer: $19\frac{3}{4}$

43) $15\frac{10}{13} - 5\frac{7}{13}$

Answer: $10\frac{3}{13}$

Perform the indicated operation and write the answer in simplest form. Write your answer as a mixed number or an improper fraction.

44) $-\frac{5}{12} \div \left(-\frac{30}{84}\right)$

Answer: $\frac{7}{6}$

45) $4\frac{2}{5} \cdot 1\frac{1}{4}$

Answer: $5\frac{1}{2}$

46) $\frac{1}{4} \cdot \left(\frac{25}{2} - \frac{1}{6}\right)$

Answer: $\frac{37}{12}$

47) $\frac{7}{6} \div \frac{1}{8} \cdot \frac{1}{4}$

Answer: $\frac{7}{3}$

48) $\left(\frac{3}{4}\right)^2 \div \left(\frac{3}{4} - \frac{1}{12}\right)$

Answer: $\frac{27}{32}$

49) $\left(\frac{3}{4} + \frac{1}{8}\right)^2 + \left(\frac{1}{2} - \frac{1}{8}\right)$

Answer: $\frac{73}{64}$

50) Multiply the mixed numbers. Write your answer as a whole number or a improper fraction. Do not write your answer as a mixed number or a decimal. $5\frac{3}{5} \cdot 8\frac{3}{4}$

Answer: 49

Solve.

51) A nail $3\frac{1}{2}$ inches long is driven into a board $2\frac{2}{5}$ inches thick. How much of the nail protrudes from the other side of the board?

Answer: $1\frac{1}{10}$ in.

52) On a recent trip, Asha drove 256 miles on $16\frac{1}{6}$ gallons of gasoline. How many miles would we expect the car to travel on 1 gallon of gas?

Answer: $15\frac{81}{97}$ mi

53) If John puts $\frac{2}{3}$ lb of roast beef on each sandwich, how many sandwiches can he make from $2\frac{2}{3}$ lb of roast beef? Do write your answer as mixed number.

Answer: 4 sandwiches

Perform the indicated operation.

54) 2.283 + 3.82 + 10.277

Answer: 16.38

55) $(-0.5)^2 + 1.81$

Answer: 2.06

56) Round the decimal to the nearest thousandth. 72.6208

Answer: 72.621

57) One week in March in the town of Simmons, it rained 2.00 inches on Monday, 0.59 inches on Wednesday, and 2.75 inches on Friday. It did not rain the other four days. What was the total rainfall for the week?

Answer: 5.34 in.

58) Gustav earns $8.90 per hour at his job. He worked 15 hours last week. Calculate Gustav's pay before taxes.

A) $133.77 B) $133.53
C) $133.95 D) $133.50

Answer: D

59) Name the property of real numbers that indicates that the following equation is true.

$9 + 6 + 3 \cdot 5 = 6 + 9 + 5 \cdot 3$

Answer: Commutativity of Addition and Multiplication

60) Name the property of real numbers that indicates that the following equation is true.
$(11 + 5) + 2 = 11 + (5 + 2)$

Answer: Associative Property of Addition

61) Name the property of real numbers that indicates that the following equation is true.
$4(8 + 7) = 4 \cdot 8 + 4 \cdot 7$

Answer: Distributive Property

Find the ratio described as a fraction in simplest form.

62) According to an organization's membership list, it has 3250 members who have cable TV and 1750 members who don't have cable. What is the ratio of members who don't have cable to the total number of members?

Answer: $\frac{7}{20}$

63) According to an organization's membership list, it has 1500 members who are male and 1750 members who are female. What is the ratio of members who are male to members who are female?

Answer: $\frac{6}{7}$

Write the rate as a unit rate.

64) 150 miles in 3 hours

Answer: 50 mi/hr

Solve the proportion for the given variable. Round the solution where indicated.

65) $\frac{x}{7} = \frac{12}{28}$

Answer: 3

66) $\frac{28}{4} = \frac{42}{x}$

Answer: 6

Use a proportion to solve the problem.

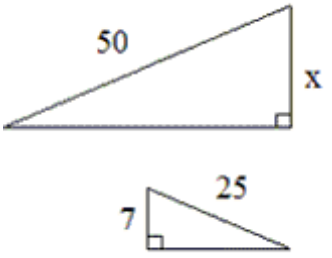
67) The scale on a map states that 1 centimeter corresponds to 40 kilometers. On the map, two cities are 21 cm apart. Find the actual distance.

Answer: 840 km

68) If a computer prints 258 lines in 3 seconds, how many lines can it print per minute?

Answer: 5160 lines

69) The triangles shown below are similar, find the unknown length of the side labeled with x.



Answer: 14

70) A motorcycle can be driven 110 miles in 3 hours, how long will it take to travel 125 miles ?

Answer: $3\frac{9}{22}$ hours

Solve.

71) A salesperson earned a commission of $3978 for selling $44,200 worth of office supplies to various stores. Find the commission rate.

Answer: 9%

72) How much commission will an agent make on the sale of a $340,700 house if she receives 1.1% of the selling price?

Answer: $3747.70

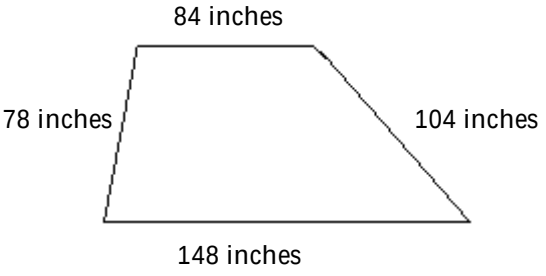
73) A $230 watch is on sale at 25% off. Find the sale price.

Answer: $172.50

74) Find the original price when the discount rate is 65% and the amount of discount is $ 409.50.

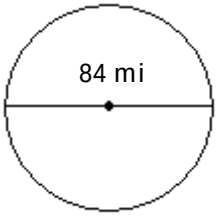
Answer: $630.00

75) Find the perimeter of the quadrilateral.



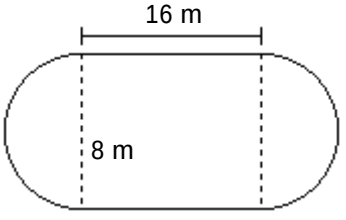
Answer: 414 in.

76) Find the exact circumference of the circle in terms of π.



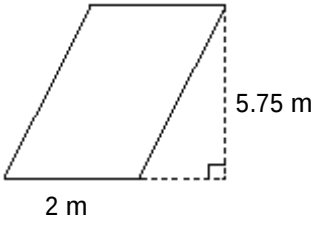
Answer: 84π mi

77) Find the perimeter. Use 3.14 for π.



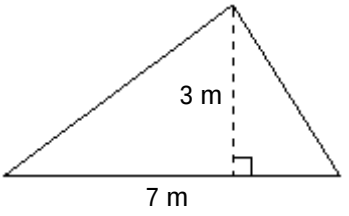
Answer: 57.12 m

78) Find the area of the parallelogram.



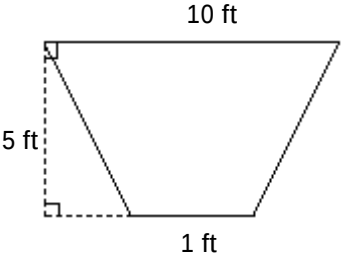
Answer: 11.5 sq m

79) Find the area of the triangle.



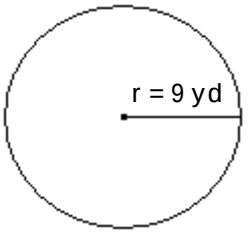
Answer: A = 10.5 m^2

80) Find the area of the trapezoid.



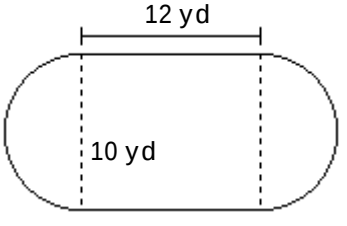
Answer: 27.5 sq ft

81) Find the area of the circle. Use $\frac{22}{7}$ for π.



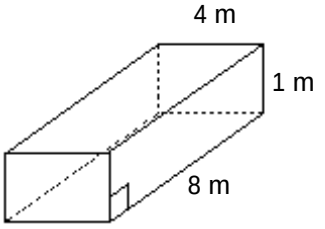
Answer: $254\frac{4}{7}$ sq yd

82) Find the area of the figure. Use 3.14 for π.



Answer: 198.5 yd^2

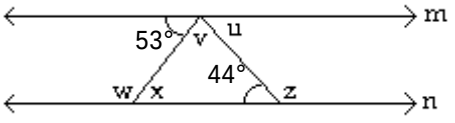
83) Find the volume of the rectangular solid.



Answer: 32 cu m

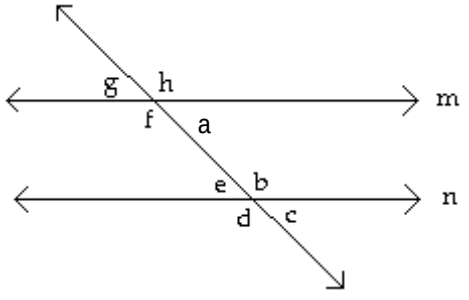
Find the measure of the indicated angle. The figure is not drawn to scale.

84) If m and n are parallel, find the measure of ∠ x.



Answer: 53°

85) If m and n are parallel and ∠c = 31°, find the measure of ∠f. The figure is not drawn to scale.



Answer: 149°