

These Pre-Algebra and Geometry problems are representative of what you might expect to find on the Final Exam. The Final Exam problems will be similar, but not exactly the same. Use this study guide to review concepts you already know and identify concepts you may need help with.

Simplify.

1) $22 + 2 \cdot 9$

1) _____

2) $(60 + 6^2) \div 3 \cdot 2^2$

2) _____

3) $\frac{28(10 - 7) - 18}{3^2 - 3}$

3) _____

Evaluate the expression for the given replacement values.

4) $8x - 3y$ for $x = 9$ and $y = 5$

4) _____

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

5) Is 7 a solution of $5m + 7 = 44$?

5) _____

Write the phrase as a variable expression. Use x to represent "a number."

6) 8 less than 3 times a number

6) _____

Simplify.

7) $-(-13)$

7) _____

Add.

8) $12 + (-15) + (-8)$

8) _____

Solve.

9) On part of a scenic tour of underground caves, Dave and Neil started at an elevation of -49 feet. They then rose 13 feet. What was their elevation at this point?

9) _____

Subtract.

10) $4 - (-1)$

10) _____

11) $-5 - 5$

11) _____

Add or subtract as indicated.

12) $-12 + 4 - (-19) + 5$

12) _____

Multiply.

13) $-16(-4)$

13) _____

Find the quotient.

14) $\frac{-49}{7}$

14) _____

Simplify.

15) $4 - 7 \cdot 8$

15) _____

16) $3 + 6 \cdot 5 - 18$

16) _____

Evaluate the expression for $x = -2$, $y = 3$, $z = -4$.

17) $7x - y^2$

17) _____

Solve the equation.

18) $d - 3 = -12$

18) _____

19) $4y = -8$

19) _____

20) $\frac{n}{4} = -6$

20) _____

Simplify the expression by combining like terms.

21) $3b - 7b$

21) _____

22) $-3b - 2a - 4c + 5b - 8a$

22) _____

Multiply.

23) $10(8x)$

23) _____

24) $-5(9a + 6)$

24) _____

Simplify the expression.

25) $7x - 3(5 - x) + 39$

25) _____

Solve the equation.

26) $6x + 8 = -52$

26) _____

27) $2(x - 12) = -15 - 3$

27) _____

28) $2n - 6 = 2$

28) _____

29) $3x + 3 + 15 = 0$

29) _____

30) $7x - 5 = 8(x + 3)$

30) _____

Write the sentence as an equation. Use x to represent "a number."

31) Ten subtracted from a number yields 15.

31) _____

Solve.

32) Nine times a number, added to -2 , is 43. Find the number.

32) _____

33) Eight times the difference of 5 and a number amounts to 144. Find the number.

33) _____

34) The difference of a number and 9 is 47 less the number. Find the number.

34) _____

35) Mary and her brother John collect foreign coins. Mary has twice the number of coins that John has. Together they have 105 foreign coins. Find how many coins Mary has.

35) _____

36) A high school graduating class is made up of 339 students. There are 77 more girls than boys. How many boys are in the class?

36) _____

37) $m - \frac{2}{3} = \frac{1}{4}$

37) _____

38) $\frac{1}{3} - \frac{3}{7} = \frac{x}{21}$

38) _____

Solve the equation.

39) $8x + 17 = 3x - 5$

39) _____

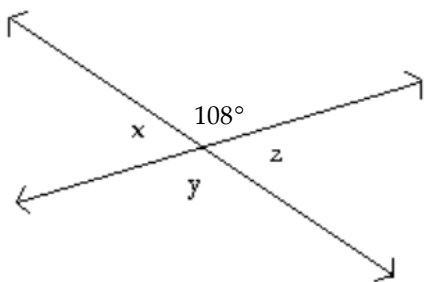
40) $4(x - 1.1) = 9.3$

40) _____

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

41) Find the measure of $\angle x$.

41) _____



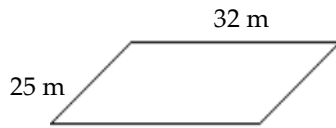
Find the indicated angle.

42) Find the complement of 12° .

42) _____

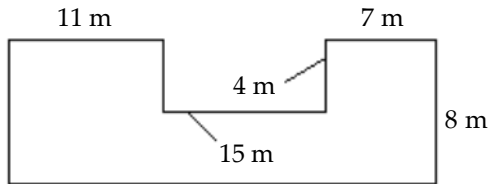
Find the perimeter of the figure.

43) Parallelogram



43) _____

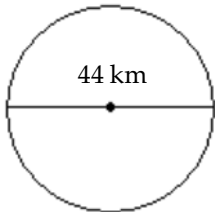
44)



44) _____

Find the exact or approximate circumference of the circle, as indicated.

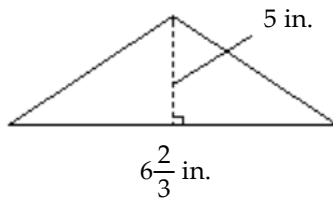
45) Find the exact circumference.



45) _____

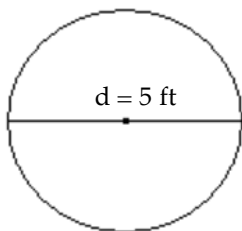
Find the area of the geometric figure.

46)



46) _____

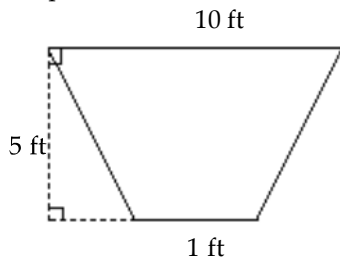
47)



47) _____

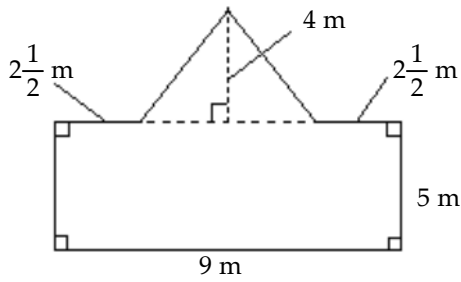
Use 3.14 for π .

48) Trapezoid



48) _____

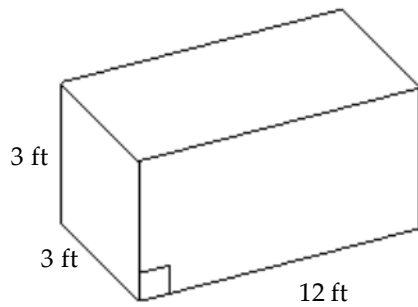
49)



49) _____

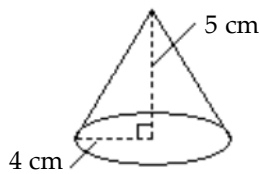
Find the volume of the solid.

50)



50) _____

51)



51) _____

Use $\frac{22}{7}$ for π .

Solve.

52) Find the volume of a pyramid with a square base 5 inches on a side and a height of $1\frac{3}{10}$ inches.

52) _____

53) A swimming pool is in the shape of a cylinder 6 feet deep and 8 feet in radius. Find the exact volume of the pool.

53) _____

54) Approximate to the nearest hundredth the volume of a sphere with a radius of 4.5 centimeters. Use 3.14 for π .

54) _____

Convert the measurement as indicated.

55) 19 yd to feet

55) _____

56) 29 in. = _____ ft _____ in.

56) _____

Perform the indicated operation. Simplify the result if possible.

57) 28 ft 1 in. - 21 ft 4 in.

57) _____

Perform the indicated operation.

58) 35 cm + 7.2 dm (in centimeters)

58) _____

Convert as indicated.

59) 38 oz to pounds

59) _____

60) 430 g to milligrams

60) _____

Perform the indicated operation.

61) 4.72 g + 253 mg (in g)

61) _____

62) 13 lb 15 oz + 30 lb 12 oz

62) _____

Convert the measurement as indicated.

63) $12\frac{3}{4}$ gal to quarts

63) _____

Perform the indicated operation.

64) 28 gal - 2 qt 1 pt

64) _____

Convert as indicated.

65) 0.6 ml to liters

65) _____

Solve. Remember to insert units when writing your answer.

66) A hiker started the day with 3.8 L of water. At the first break, she drank 176 ml. How many liters of water remained?

66) _____

Convert as indicated. If necessary, round to the nearest tenth of a degree.

67) 124.1°C to degrees Fahrenheit

67) _____

68) Mia is running a fever of 104.9°F. Find this temperature as it would be shown on a Celsius thermometer.

68) _____

Find the square root.

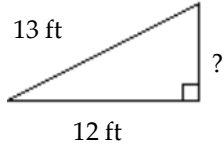
69) $\sqrt{\frac{16}{25}}$

69) _____

Find the unknown length in the right triangle. If necessary, approximate the length to the nearest thousandth.

70)

70) _____



Sketch the right triangle and find the length of the side not given. If necessary, approximate the length to the nearest thousandth.

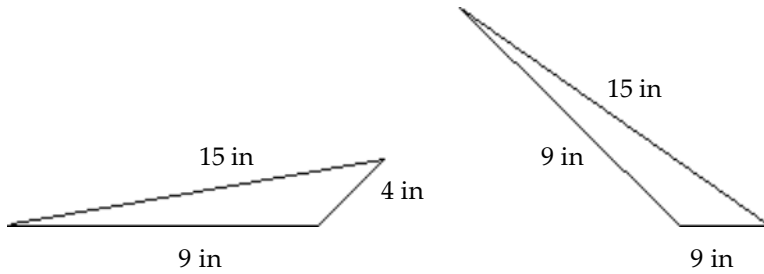
71) leg = 8, leg = 9

71) _____

Determine whether the pair of triangles is congruent.

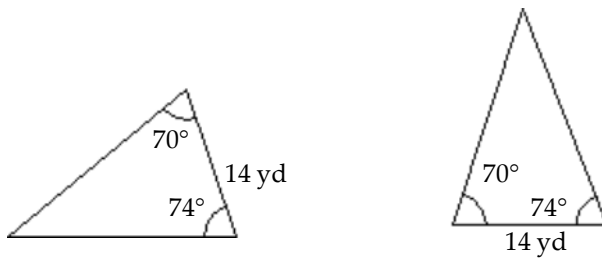
72)

72) _____



73)

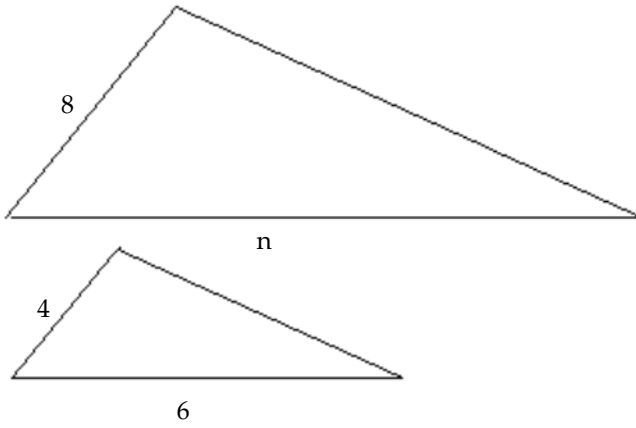
73) _____



Given that the pair of triangles is similar, find the unknown length of the side labeled with a variable.

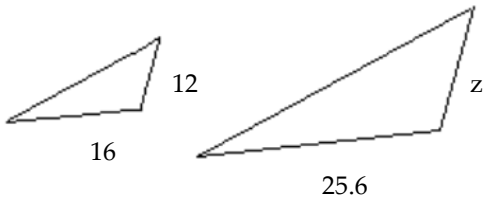
74)

74) _____



75)

75) _____



Answer Key

Testname: MATH 71 - FINAL REVIEW

- 1) 40
- 2) 128
- 3) 11
- 4) 57
- 5) no
- 6) $3x - 8$
- 7) 13
- 8) -11
- 9) -36 ft
- 10) 5
- 11) -10
- 12) 16
- 13) 64
- 14) -7
- 15) -52
- 16) 15
- 17) -23
- 18) -9
- 19) -2
- 20) -24
- 21) -4b
- 22) $-10a + 2b - 4c$
- 23) $80x$
- 24) $-45a - 30$
- 25) $10x + 24$
- 26) -10
- 27) 3
- 28) 4
- 29) -6
- 30) -29
- 31) $x - 10 = 15$
- 32) 5
- 33) -13
- 34) 28
- 35) 70 coins
- 36) 131 boys
- 37) $\frac{11}{12}$
- 38) -2
- 39) -4.4
- 40) 3.425
- 41) 72°
- 42) 78°
- 43) 114 m
- 44) 90 m
- 45) 44π km
- 46) $16\frac{2}{3}$ sq in.
- 47) 19.625 sq ft

Answer Key

Testname: MATH 71 - FINAL REVIEW

48) 27.5 sq ft

49) 53 sq m

50) 108 cu ft

51) $83\frac{17}{21}$ cu cm

52) $10\frac{5}{6}$ cu in.

53) 384π cu ft

54) 381.51 cu cm

55) 57 ft

56) 2 ft 5 in.

57) 6 ft 9 in.

58) 107 cm

59) $2\frac{3}{8}$ lb

60) 430,000 mg

61) 4.973 g

62) 44 lb 11 oz

63) 51 qt

64) 27 gal 1 qt 1 pt

65) 0.0006 L

66) 3.624 L

67) 255.4°F

68) 40.5°C

69) $\frac{4}{5}$

70) 5 ft

71) 12.042

72) not congruent

73) congruent

74) 12

75) 19.2