

Please provide worked out solutions on loose leaf paper.

**Fractions** – These questions should be completed without the use of a calculator.

Find each sum or difference. Simplify, if possible.

1.  $\frac{5}{8} + \frac{7}{12} =$

2.  $\frac{3}{5} - \frac{1}{4} =$

3.  $10\frac{1}{18} + 3\frac{3}{4} =$

4.  $5\frac{3}{4} - 2\frac{1}{8} =$

5.  $1\frac{7}{8} - 2\frac{3}{4} =$

6.  $1\frac{5}{6} + 2\frac{7}{9} =$

7. Kim works on social studies homework for  $2\frac{2}{5}$  hours. Then, she works on math homework for  $1\frac{1}{4}$  hours.

How many total hours does Kim spend doing homework?

8. Ali hiked  $3\frac{17}{20}$  hours in one day. She hiked  $2\frac{1}{10}$  hours on the Pacific Crest Trail. How many hours did she

hiked to her campsite?

9. A cookie recipe calls for  $2\frac{1}{2}$  cups of sugar. You have  $1\frac{3}{4}$  cups of sugar left in a bag that you purchased

Previously. How much more sugar do you need?

Find each product or quotient. Simplify, if possible.

10.  $\left(\frac{1}{2}\right)\left(\frac{3}{8}\right) =$

11.  $\left(\frac{5}{9}\right)\left(\frac{9}{10}\right) =$

12.  $\left(1\frac{2}{5}\right)\left(2\frac{2}{7}\right) =$

13.  $\left(3\frac{2}{5}\right)\left(1\frac{2}{3}\right) =$

14.  $\frac{5}{8} \div \frac{3}{4} =$

15.  $\frac{11}{12} \div \frac{7}{8} =$

16.  $2\frac{3}{4} \div \frac{1}{5} =$

17.  $6\frac{3}{4} \div \frac{9}{10} =$

18. Maria spends  $\frac{3}{4}$  of an hour exercising. Her older sister Gina spends  $1\frac{2}{3}$  times as much time exercising as Maria does. How much time does Gina spend exercising?

**Decimals** – These questions should be completed without the use of a calculator.

Write each decimal as a fraction or a mixed number in simplest form.

19. 2.25

20. 0.08

21. 7.15

Order from least to greatest.

22.  $\frac{1}{2}, \frac{3}{2}, \frac{5}{2}, 0.3$

23.  $1.2, \frac{3}{5}, \frac{9}{10}, 0.5$

Find each sum or difference.

24.  $16.37 + 34.98 =$

25.  $12.35 + 1.2 + 4.569 =$

26.  $18.6 - 12.95 =$

27.  $23.12 - 19.753 =$

Find each product or quotient.

28.  $2.5 \times 3.7 =$

29.  $1.23 \times 4.6 =$

30.  $27.01 \div 3.7 =$

31.  $288.96 \div 11.2 =$

**Percents** – These questions should be completed without the use of a calculator.

Write each percent as a decimal and as a fraction in simplest form.

32. 28% =

33. 55% =

34. 315% =

Find each.

35. Find 30% of 30.
36. What percent of 40 is 25?
37. 85% of what number is 106,250?
38. Find 15% of 150.
39. 3.5% of what number is 0.105?
40. What percent of 150 is 96?
41. A sports agent makes 16% commission on an athlete's signing bonus. If the bonus is \$26,000, what is the agent's commission?

Find the percent increase or decrease.

42. from 30 to 39
43. from 55 to 176
44. from 180 to 108
45. A clothing store pays \$56 for a jacket. The store's percent of markup is 75%. Find the markup for the jacket.
46. Boots regularly cost \$125 are discounted for 30% off. What are the discount and sale price?

**Order of Operations** – These questions should be completed without the use of a calculator.

Simplify each expression.

47.  $21 \div 7 + 14 \times 2 =$
48.  $7 + 3 \cdot (8 \div 4) =$
49.  $2(6) + \frac{7+8}{3} =$
50.  $2[8 + (5 - 3)] - 8 =$
51.  $49 - (4 \cdot 2)^2 =$
52.  $15 + (4 + 6)^2 \div 5 =$
53.  $(12 - 3)^2 \div (2^2 - 1^2) =$
54.  $(4 + 8)^2 \div 4^2 =$

Evaluate each expression.

55.  $-6m^2$  if  $m = 2$

56.  $4(2y - 3)^2$  for  $y = 5$

### Combining Like Terms

Simplify each expression.

57.  $5x + 6y + 4(2x + 8y) =$

58.  $11a + 18b - 6a + 5b =$

59.  $2(5x + 4y) + 3(x - 2y) =$

60.  $\frac{2}{3}(12x + 15y) - 5x - 6y =$

### Solving Linear Equations

Solve each equation. Provide the steps taken to produce the solution.

61.  $m + 15 = 36$

62.  $a - 7 = 14$

63.  $\frac{3}{4}m = 24$

64.  $\frac{y}{5} - 4 = 6$

65.  $3(2x + 1) + x = -39$

66.  $\frac{5}{8}p - 2\frac{1}{2} = 2$

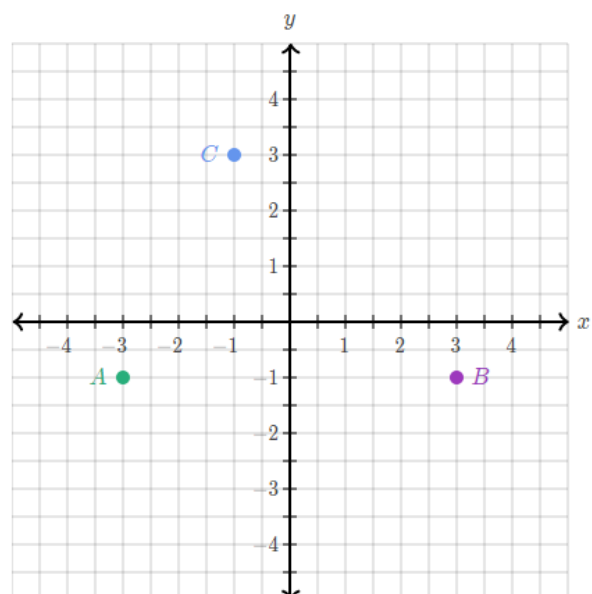
### The Coordinate Plane

Find the coordinates of each point.

67.  $A$

68.  $B$

69.  $C$



Plot the following points in the coordinate plane.

70.  $M(1,7)$

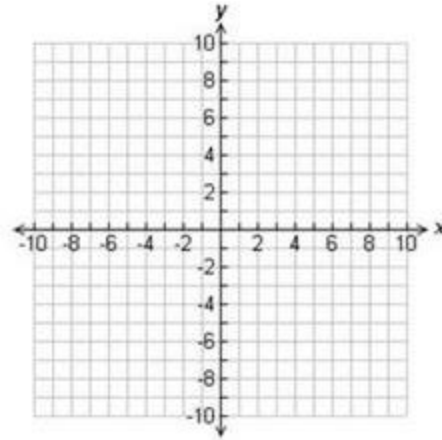
71.  $N(0,-5)$

72.  $P(-2,-6)$

73.  $Q(5,0)$

74.  $R(4,-3)$

75.  $T(-3,4)$



### Signed Numbers

Find each sum, difference, product or quotient. No calculator should be used.

76.  $19 + (-9) + 45 + (-32) =$

77.  $-20 + (-89) + 112 + 9 =$

78.  $|-20| + (-7) =$

79.  $15 - (-8) =$

80.  $(20)(-15) =$

81.  $(-15)\left(-\frac{2}{3}\right) =$

82.  $-45 \div 9 =$

83.  $-50 \div \left(-\frac{5}{3}\right) =$

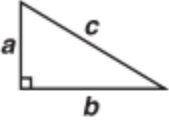
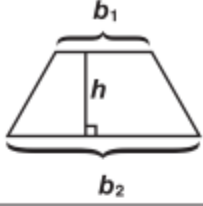
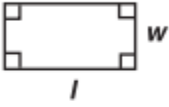
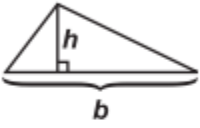
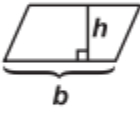

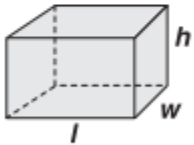
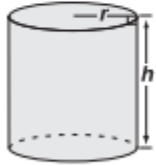


84.  $\frac{-63}{7} =$

85.  $\frac{25}{-2.5} =$

86.  $|-12| \cdot |-7| =$

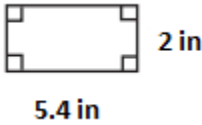
87.  $(-18) - (-7) =$

**Geometry Formulas**

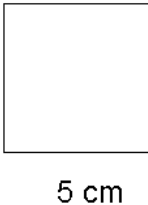
<p><b>Pythagorean Formula</b></p> $c^2 = a^2 + b^2$ 	<p><b>Trapezoid</b></p> $\text{Area} = \frac{1}{2}h(b_1 + b_2)$ 
<p><b>Rectangle</b></p> $\text{Area} = lw$ $\text{Perimeter} = 2(l + w)$ 	<p><b>Triangle</b></p> $\text{Area} = \frac{1}{2}bh$ 
<p><b>Parallelogram</b></p> $\text{Area} = bh$ 	<p><b>Circle</b></p> $\text{Area} = \pi r^2$ $\text{Circumference} = 2\pi r$ 
<p><b>Rectangular Prism</b></p> $\text{Volume} = lwh$ $\text{Surface Area} = 2lw + 2wh + 2lh$ 	<p><b>Cylinder</b></p> $\text{Volume} = \pi r^2 h$ $\text{Surface Area} = 2\pi rh + 2\pi r^2$ 
<p><b>Sphere</b></p> $\text{Volume} = \frac{4}{3}\pi r^3$ $\text{Surface Area} = 4\pi r^2$ 	<p><b>Cone</b></p> $\text{Volume} = \frac{1}{3}\pi r^2 h$ 

Find the requested values.

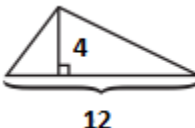
88. perimeter and area of the rectangle



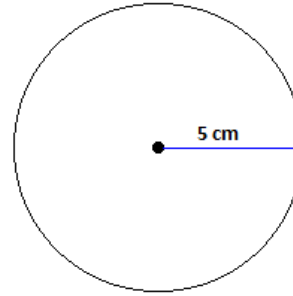
89. perimeter and area of the square



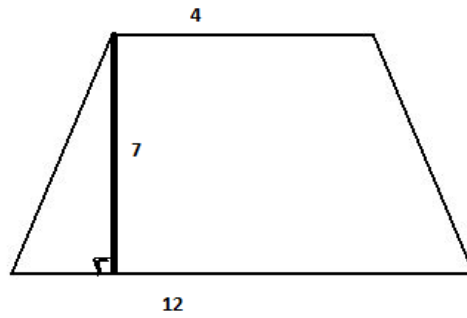
90. area of the triangle



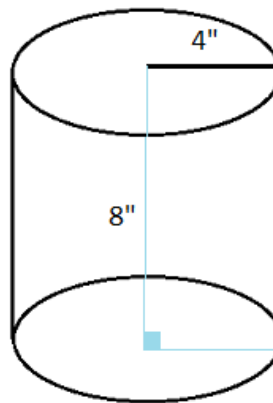
91. circumference and area of the circle in terms of  $\pi$



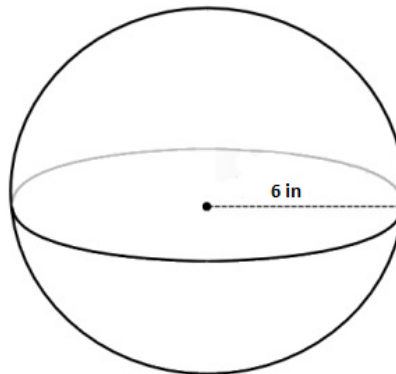
92. area of the trapezoid



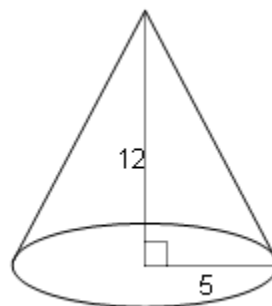
93. volume of the cylinder in terms of  $\pi$



94. volume of the sphere in terms of  $\pi$



95. volume of the cone in terms of  $\pi$



Find the requested measure.

96. If a rectangle has a perimeter of 34 inches and a width of 5 inches, what is its length?
97. If a square has an area of 225 square meters, what is the length of a side of the square?
98. If a sphere has a volume of  $36\pi$  cubic yards, what is the length of its radius?
99. If a cylinder has a volume of  $100\pi$  cubic feet, and a radius of length 5 feet, what is the height of the cylinder?
100. If a triangle has a base length of 6 centimeters and an area of 36 square centimeters, find the height of the triangle.