

**La Salle Institute**

**Summer Math Assignment**

**For students going into: Algebra 2 H**

**Directions:**

- Answer EVERY problem
- Work is to be done in the packet
- Use PENCIL only
- Show all work
- Hand completed assignment to your teacher on the **Monday, September 11, 2017.**
- If assistance is needed, please refer to your notes from this past year (Geometry notes) or you may use Khan Academy and/or You Tube.
- This packet will be graded:
  - Your teacher will review the work and assess your effort
  - A review TEST will be given in the first two weeks of school for a grade

Any questions you may contact me at [cmarcello@lasalleinstitute.org](mailto:cmarcello@lasalleinstitute.org)

Thank you

Ms. Marcello



### Classifying Angles:

Classify each angle as acute, obtuse, right, or straight.

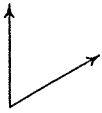
1)



2)



3)



4)



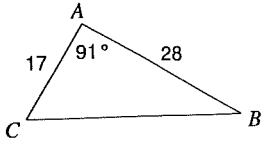
5)



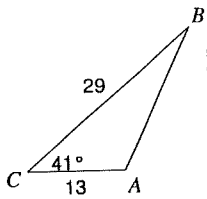
## Law of Cosines

Find each measurement indicated. Round answers to the nearest tenth.

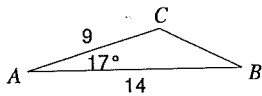
6) Find BC



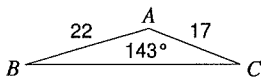
7) Find AB



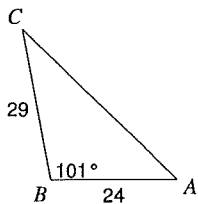
8) Find BC



9) Find  $m\angle B$



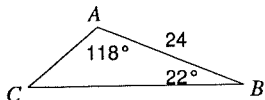
10) Find  $m\angle C$



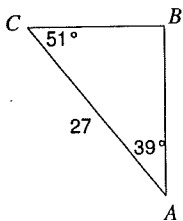
## Law of Sines

Find each measurement indicated. Round your answers to the nearest tenth.

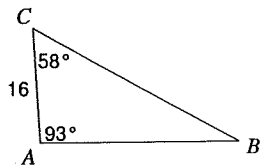
- 11) Find AC



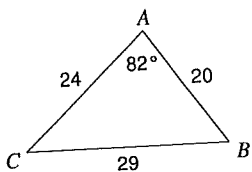
- 12) Find BC



- 13) Find BC



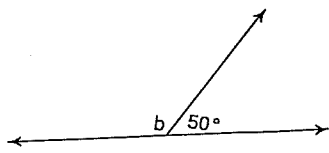
- 14) Find  $m\angle C$



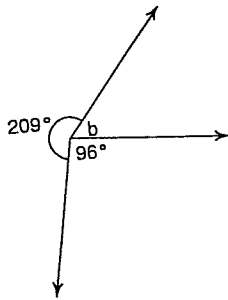
13

Find the measure of angle b.

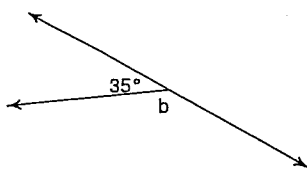
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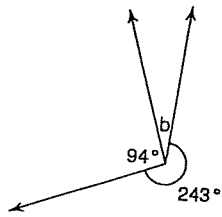
16)



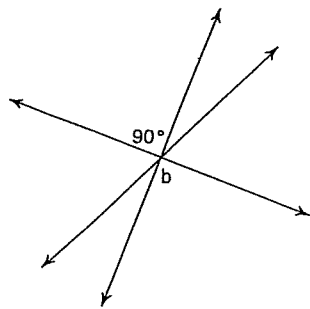
17)



18)

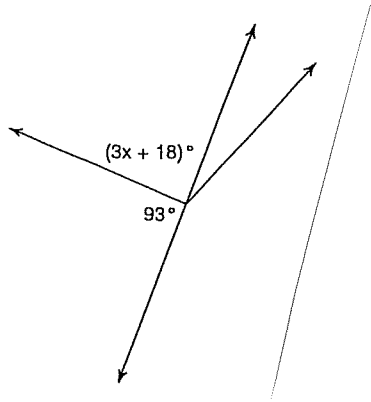


19)

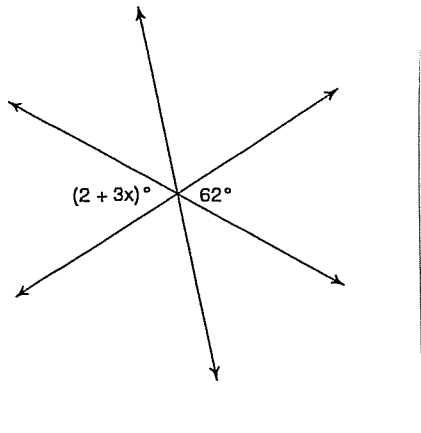


Find the value of x.

20)



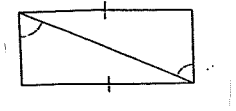
21)



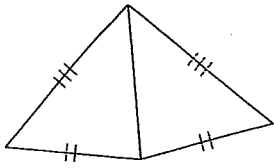
### SSS, SAS, ASA, and AAS Congruence

State if the two triangles are congruent. If they are, state how you know.

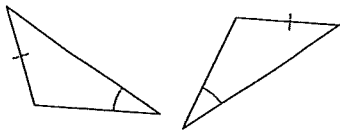
22)



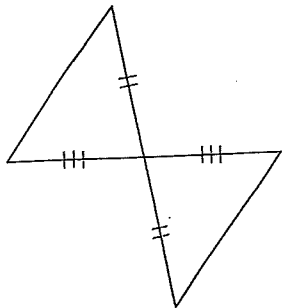
23)



24)



25)





## The Triangle Inequality Theorem

State if the three numbers can be the measure of the sides of a triangle

26) 7, 5, 4

27) 5, 2, 4

28) 9, 6, 5

29) 4, 7, 8

30) 2, 15, 16

31) 3, 10, 8

Two sides of a triangle have the following measures. Find the range of the possible measures of the third side.

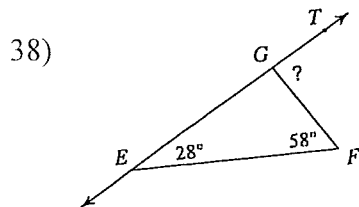
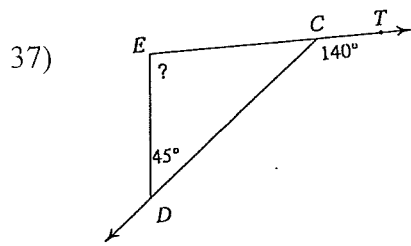
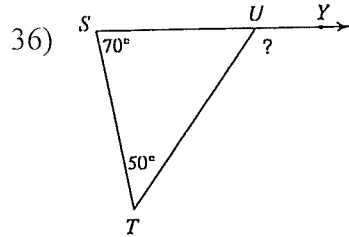
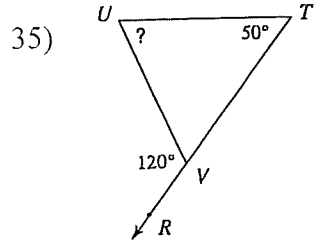
32) 9, 5

33) 6, 10

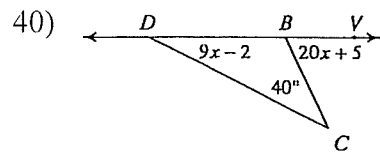
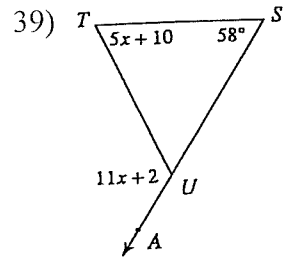
34) 11, 8

# The Exterior Angle Theorem

Find the measure of each angle indicated.

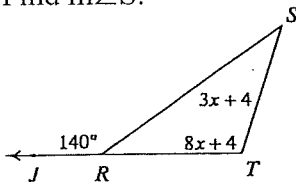


Solve for x.

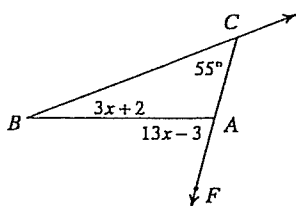


Find the measure of the indicated angle.

41) Find  $m\angle S$ .



42) Find  $m\angle FAB$ .



## Simplifying Square Roots

Simplify.

43)  $\sqrt{96}$

44)  $\sqrt{98}$

45)  $\sqrt{72}$

46)  $\sqrt{45}$

47)  $\sqrt{343}$

48)  $10\sqrt{96}$

## The Midpoint Formula

Find the midpoint of the line segment with the given endpoints.

49)  $(-4, 4), (5, -1)$

50)  $(5, 2), (-4, -3)$

Find the other endpoint of the line segment with the given endpoint and midpoint.

51) Endpoint:  $(-1, 9)$ , Midpoint:  $(-9, 10)$

## The Distance Formula

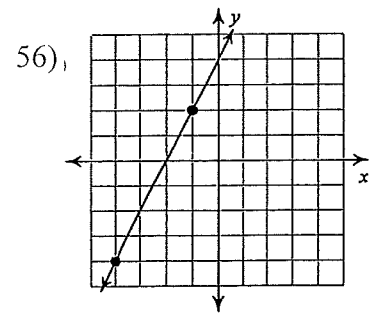
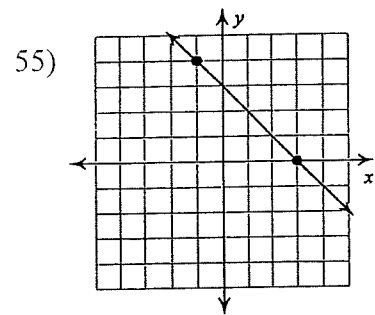
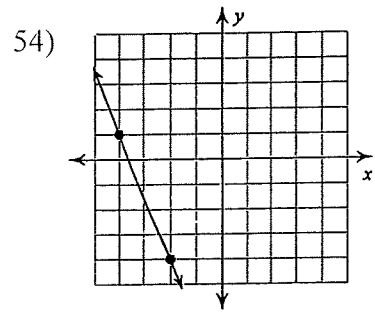
Find the distance between each pair of points. Round to the nearest tenth if necessary.

52)  $(-2, 3), (-7, -7)$

53)  $(-10, -7), (-8, 1)$

## Parallel Lines in the Coordinate Plane

Find the slope of each line.



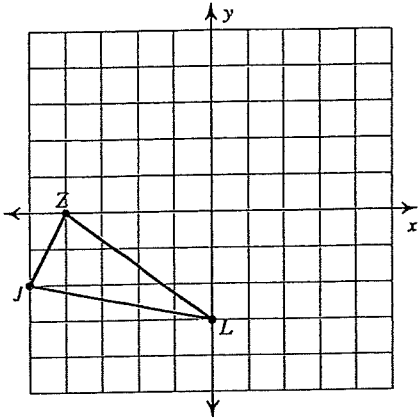
57)  $y = -\frac{1}{3}x - 4$

58)  $x = -1$

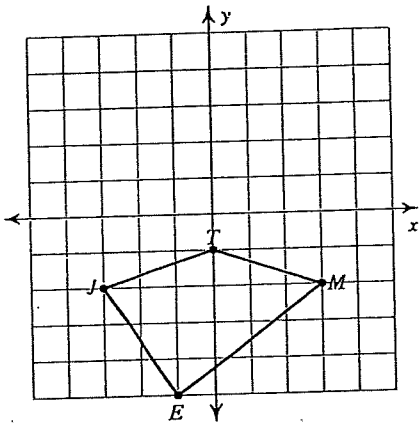
# All Transformations

Graph the image of the figure using the transformation given.

- 59) rotation  $90^\circ$  counterclockwise about the origin

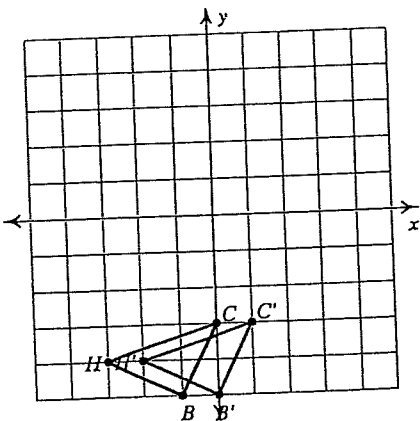


- 60) translation: 1 unit right and 1 unit up

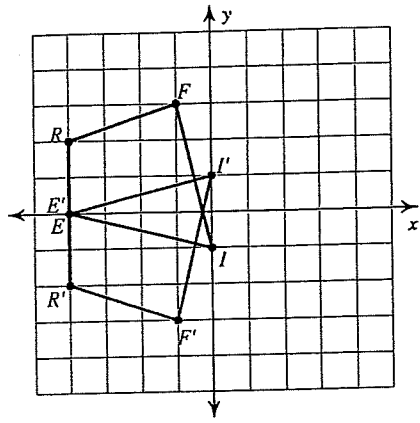


Write a rule to describe each transformation.

- 61)

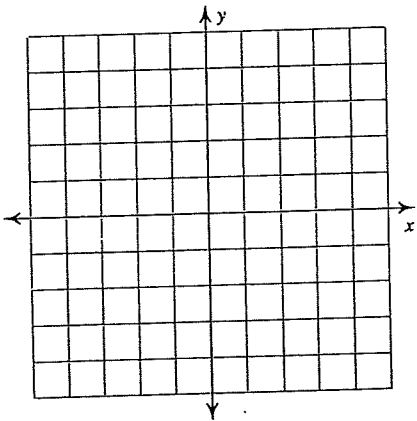


62)



Graph the image of the figure using the transformation given.

63) rotation  $90^\circ$  clockwise about the origin  
 $B(-2, 0)$ ,  $C(-4, 3)$ ,  $Z(-3, 4)$ ,  $X(-1, 4)$



Find the slope of a line parallel to each given line.

64)  $y = 2x - 5$

65)  $y = \frac{4}{5}x - 3$

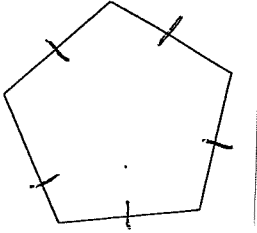
66)  $y = -x - 2$



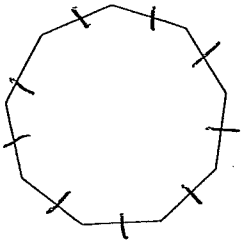
## Polygons and Angles

Find the measure of an interior angle in each polygon. Round to the nearest tenth if necessary.

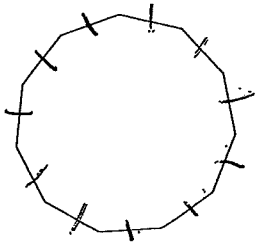
67)



68)



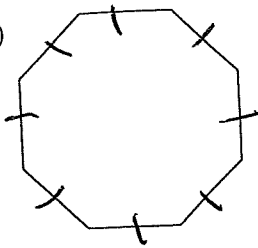
69)



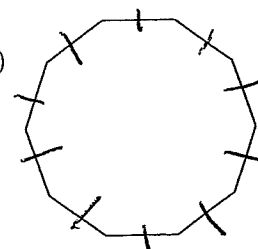
70) regular 23-gon

Find the measure of one exterior angle in each polygon. Round to the nearest tenth if necessary.

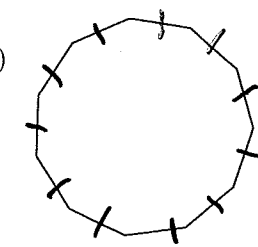
71)



72)



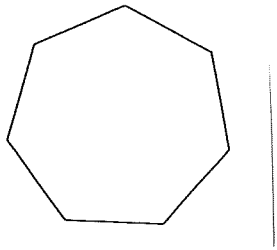
73)



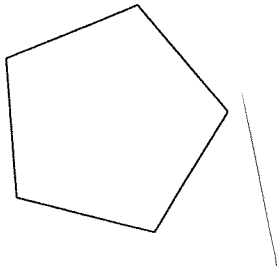
74) regular 20-gon

Find the interior angle sum for each polygon. Round to the nearest tenth if necessary.

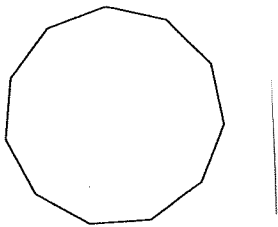
75)



76)



77)

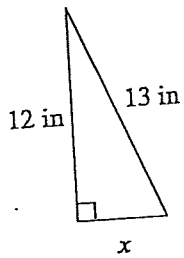


78) regular quadrilateral

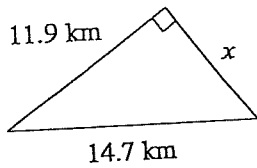
## The Pythagorean Theorem

Find the missing side of each triangle. Round to the nearest tenth if necessary.

79)

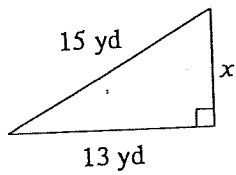


80)



Find the missing side of each triangle. Leave answers in simplest radical form.

81)

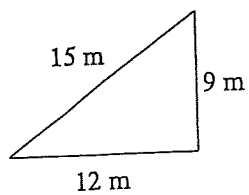


If  $a$  and  $b$  are the legs of the right triangle, and  $c$  is the hypotenuse, find the missing side of the right triangle. Leave answers in simplest radical form.

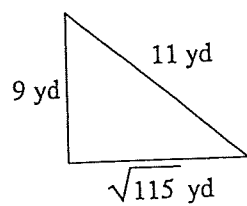
82)  $a = 11\text{m}$ ,  $c = 15\text{m}$

State if each triangle is a right triangle.

83)



84)



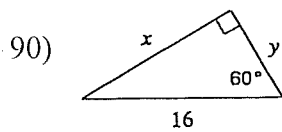
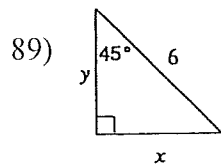
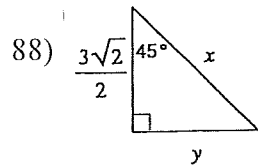
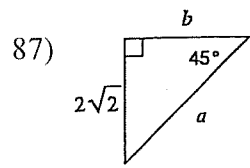
State if the three sides' lengths form a right triangle.

85) 10 cm, 49.5 cm, 50.5 cm

86) 9 in, 12 in, 15 in

## Special Right Triangles

Find the missing side lengths. Leave answers in simplest radical form.



## Solving Two-Step and Multi-Step Equations

Solve each equation.

$$91) -6 + \frac{x}{4} = -5$$

$$92) -1 = \frac{5+x}{6}$$

$$93) 2(n + 5) = -2$$

$$94) -6 = \frac{n}{2} - 10$$

$$95) -9x + 1 = -81$$

$$96) -243 = -9(10 + x)$$

$$97) \frac{m}{9} - 1 = -2$$

$$98) p - 4 = -9 + p$$

$$99) -3(4x + 3) + 4(6x + 1) = 43$$

$$100) -5(1 - 5x) + 5(-8x - 2) = -4x - 8x$$



$$101) -(1 + 7x) - 6(-7 - x) = 36$$

$$102) -10n + 3(8 + 8n) = -6(n - 4)$$

$$103) 10(x + 3) - (-9x - 4) = x - 5 + 3$$

$$104) -1 = -3r + 2r$$

$$105) 75 = 3(-6n - 5)$$

## Solving Proportions

Solve each proportion. Leave your answer as a fraction in simplest form.

$$106) \frac{6}{2} = \frac{4}{p}$$

$$107) \frac{n}{4} = \frac{8}{7}$$

$$108) \frac{m}{5} = \frac{7}{2}$$

Solve each proportion. Round your answers to the nearest hundredth.

$$109) \frac{7.7}{3.6} = \frac{2.3}{b}$$

$$110) \frac{6.3}{x} = \frac{2.56}{9.3}$$

Solve each proportion. Leave your answer as a fraction in simplest form.

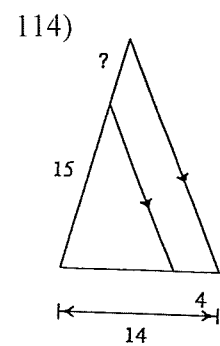
111)  $\frac{9}{8} = \frac{k+6}{6}$

112)  $\frac{10}{p+2} = \frac{4}{3}$

113)  $\frac{m}{8} = \frac{m+7}{9}$

### Proportional Parts in Triangles and Parallel Lines

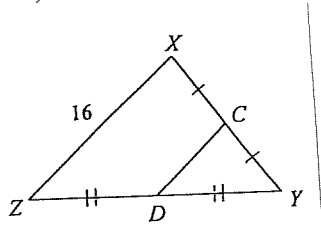
Find the missing length indicated.



## Midsegment of a Triangle

Find the missing length indicated.

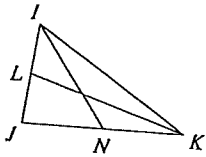
115) Find  $CD$



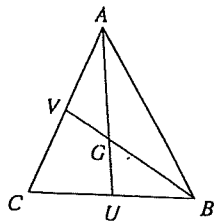
## Medians

Each figure shows a triangle with one or more of its medians.

116) Find  $LJ$  if  $IJ = 6$

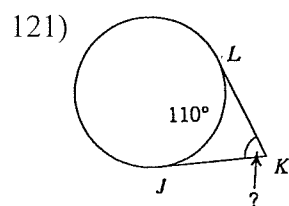
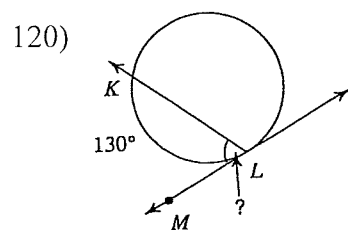
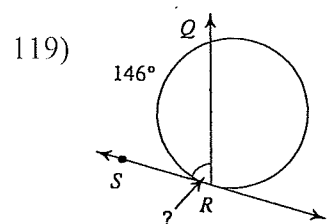
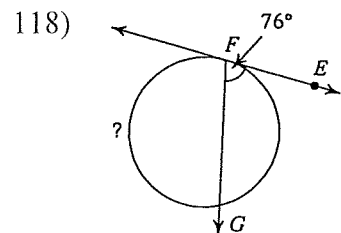


117) Find  $BG$  if  $BV = 3.9$

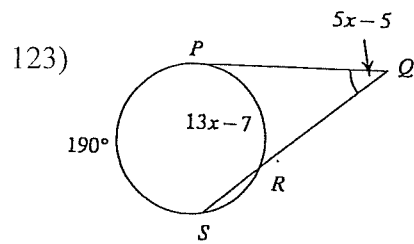
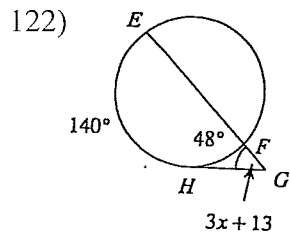


## Secant-Tangent and Tangent-Tangent Angles

Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

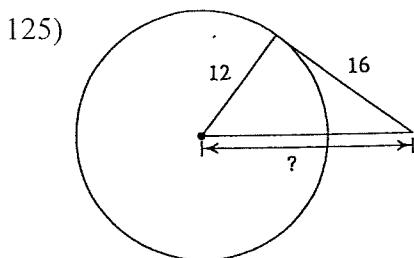
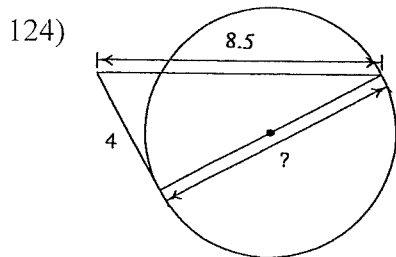


Solve for x.



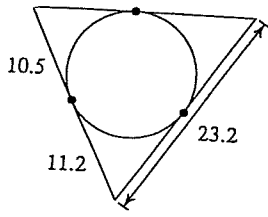
### Tangents to Circles

Find the segment length indicated.

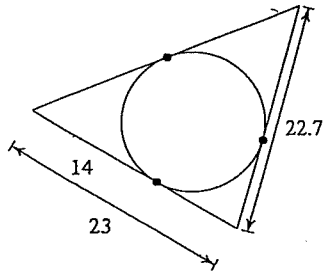


Find the perimeter of each polygon.

126)



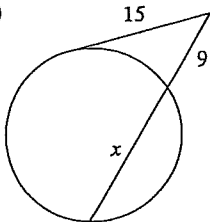
127)



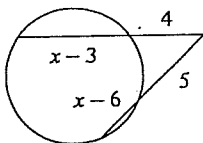
### Segment Lengths in Circles

Solve for  $x$ .

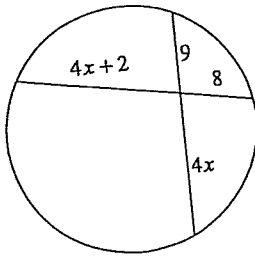
128)



129)



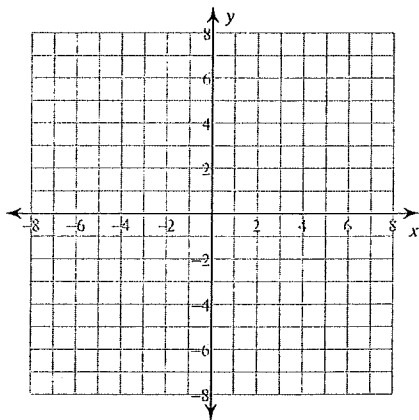
130)



## Equations of Circles

Identify the center and the radius of each. Then sketch the graph.

131)  $(x - 1)^2 + (y + 3)^2 = 4$



132)  $(x - 1)^2 + (y + 4)^2 = 9$

