

6/24

Name \_\_\_\_\_  
 Chord:  $\overline{JM}$   $\overline{KM}$

1) List all of the lines/segments that intersect the circle  
 Diameter  $\overline{KM}$   
 Radii  $\overline{JM}$   $\overline{JL}$   
 Tangent line  $\overline{MN}$   
 Secant  $\overline{JM}$

- GEOMETRY - Spring Benchmark #1 - By Topic
1. Triangle Congruency, Similarity, Properties = 4
  2. Parallelograms = 3
  3. Right Triangles = 4
  4. Circles = 8
  5. Factoring = 6

2.  $x = 64$   
 $m\widehat{AB} = 164$   
 $m\widehat{ADB} = 296$

3.  $m\angle J = 25^\circ$   
 $m\widehat{AI} = 50^\circ$

4.  $182^\circ$   
 $89^\circ$

5.  $m\widehat{AB} = 268^\circ$   
 $m\widehat{BD} = 92^\circ$

6.  $x = 44$   
 $m\widehat{AV} = 88$

7.  $248^\circ$   
 $64^\circ$

8.  $124^\circ$   
 $59^\circ$

9.  $128^\circ$   
 $60^\circ$

10. List the properties you know about the diagonals of each parallelogram

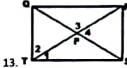
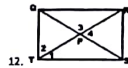
- a. parallelogram: diagonals bisect each other
- b. rectangle: diagonals are  $\cong$
- c. rhombus: diagonals are  $\perp$ , they bisect opposite angles
- d. square: diagonals are  $\perp$ , they are  $\cong$ , bisect opposite angles

11. In rectangle RAIN below,  $YR = 3x$  and  $NY = 10$ , find  $x$ .

$x = 6$

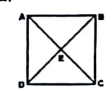
$m\angle 2 = 35^\circ$   
 $m\angle 3 = 70^\circ$   
 $m\angle 4 = 110^\circ$   
 $m\angle 1 = 55^\circ$ , find the measures of  $\angle 2$ ,  $\angle 3$  and  $\angle 4$ .

$m\angle 2 = 55^\circ$   
 $m\angle 3 = 110^\circ$   
 $m\angle 4 = 70^\circ$   
 $m\angle 1 = 35^\circ$   
 $m\angle 3 = 110^\circ$ , find the measures of  $\angle 1$ ,  $\angle 2$ , and  $\angle 4$ .

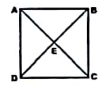


Use square ABCD and the given information to find each value.

32.	If $m\angle AEB = (3x)^\circ$ , find $x$ .	$30^\circ$
33.	If $m\angle BAC = (9x)^\circ$ , find $x$ .	5
34.	If $AB = 2x + 4$ and $CD = 3x - 5$ , find BC. Find BC and BD.	$BC = 22$
a.	The perimeter of the square is 32 cm. Find the length of diagonal DB.	11.3 $8\sqrt{2}$
b.	$DE = 10$ , find AD.	14.1 $10\sqrt{2}$
c.	The area of the square is 16. Find EC.	2.8 $2\sqrt{2}$



$BD = 20\sqrt{2}$



Find the indicated value.

35.	ACKJ is a rhombus. $AC = 6y + 4$ , $CK = 5y + 8$ , and $KJ = 3y + 16$ . Find the value of $y$ .	4
a.	Quadrilateral DKLM is a rhombus. If $DK = 8$ , find $KL$ .	8



m∠1 = 38'  
m∠2 = 38'  
m∠3 = 38'  
m∠4 = 38'

Find the measures of the numbered angles in each rhombus.

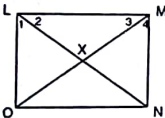


m∠1 = 32  
m∠2 = 90  
m∠3 = 58  
m∠4 = 32

Find the measures of the numbered angles in each rhombus.

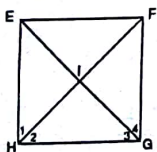
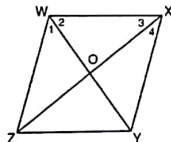


Use the properties to solve for the missing measures in the diagrams.



1. LMNO is a rectangle. If LM = 16, MN = 12, and  $\angle 1 = 60^\circ$ , find the following:  
a. ON = 12 d. LX = 10 g. OX = 10  
b. OL = 12 e.  $\angle LON = 90$  h.  $\angle 3 = 30$   
c. LN = 20 f.  $\angle 2 = 30$  i.  $\angle 4 = 60$

2. WXYZ is a rhombus. If WX = 4 and  $\angle WXY = 60^\circ$ , find the following:  
a. XY = 4 d.  $\angle 2 = 60$  g. WO = 2  
b.  $\angle ZWX = 120$  e.  $\angle 3 = 30$  h. OX = 2  
c.  $\angle 1 = 60$  f.  $\angle 4 = 30$  i. WY = 4



3. EFGH is a square. If EF = 10, find the following:  
a. FG = 10 d. EI = 5/2 g.  $\angle 1 = 45$   
b.  $\angle EFG = 90$  e. IF = 5/2 h.  $\angle 3 = 45$   
c. EG = 10/2 f.  $\angle EIF = 90$  i. HF = 10/2

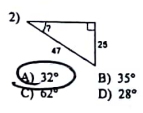
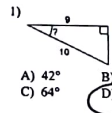
Analytic Geometry

SBM#1 Review problems

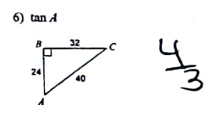
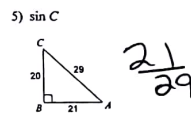
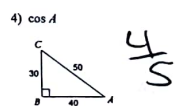
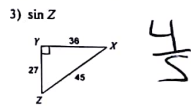
Name \_\_\_\_\_ ID: 1

Date \_\_\_\_\_ Period \_\_\_\_\_

Find the measure of the indicated angle to the nearest degree.



Find the value of each trigonometric ratio.



Find the length of each arc.

7)  $r = 11$  m,  $\theta = 300^\circ$   
A)  $\frac{400\pi}{3}$  m B)  $36300\pi$  m  
C)  $\frac{55\pi}{3}$  m D)  $\frac{25\pi}{4}$  m

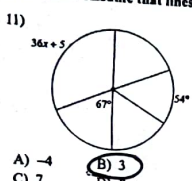
8)  $r = 10$  mi,  $\theta = 270^\circ$   
A)  $75\pi$  mi B)  $15\pi$  mi  
C)  $\frac{\pi}{3}$  mi D)  $2\pi$  mi

Find the area of each sector.

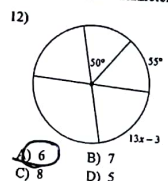
9)  $r = 11$  m,  $\theta = 135^\circ$   
A)  $16335\pi$  m<sup>2</sup> B)  $2970\pi$  m<sup>2</sup>  
C)  $14\pi$  m<sup>2</sup> D)  $\frac{363\pi}{8}$  m<sup>2</sup>

10)  $r = 15$  ft,  $\theta = 300^\circ$   
A)  $25\pi$  ft<sup>2</sup> B)  $\frac{5\pi}{6}$  ft<sup>2</sup>  
C)  $\frac{15\pi}{2}$  ft<sup>2</sup> D)  $\frac{375\pi}{2}$  ft<sup>2</sup>

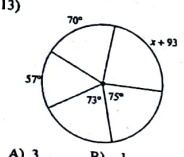
Solve for  $x$ . Assume that lines which appear to be diameters are actual diameters.



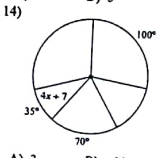
- A) -4  
C) 7  
**B) 3**  
D) 0



- A) 6**  
C) 8  
B) 7  
D) 5

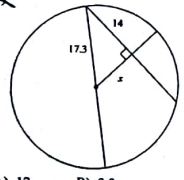


- A) 3  
C) 11  
**B) -1**  
D) -5

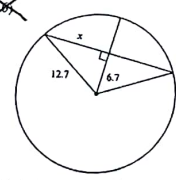


- A) 3  
C) 11  
**B) -11**  
D) 7

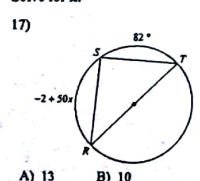
Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.



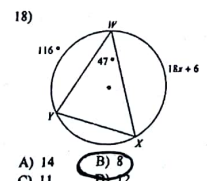
- A) 12  
C) 6.3  
B) 9.9  
D) 10.2



- A) 15.5  
C) 6.5  
B) 10.8  
D) 14.9



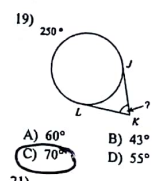
- A) 13**  
C) 2  
B) 10  
D) 7



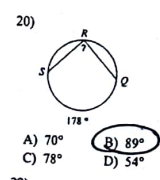
- A) 14  
C) 11  
**B) 8**  
D) 12

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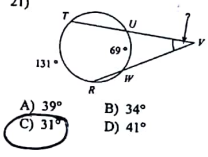
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.



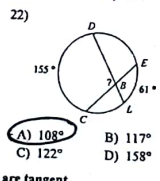
- A) 60°  
C) 70°  
B) 43°  
D) 55°



- A) 70°  
C) 78°  
**B) 89°**  
D) 54°

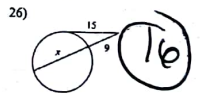
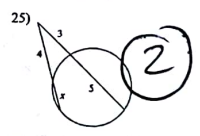
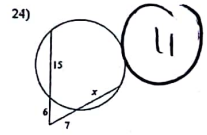
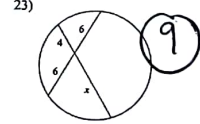


- A) 39°  
C) 31°  
B) 34°  
D) 41°

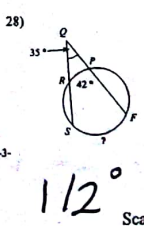
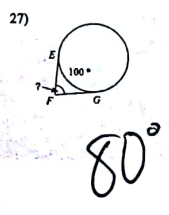


- A) 108°**  
C) 122°  
B) 117°  
D) 158°

Solve for  $x$ . Assume that lines which appear tangent are tangent.

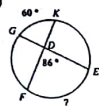


Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.



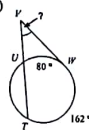
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29)



112

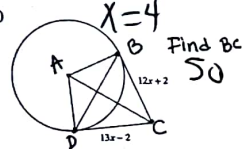
30)



41

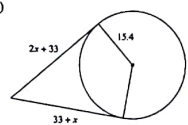
Solve for  $x$ . Assume that lines which appear to be tangent are tangent.

31)



$x=4$   
Find BC  
50

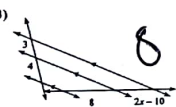
32)



$x=0$

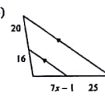
Solve for  $x$ .

33)



8

34)



3

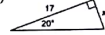
Find the missing side. Round to the nearest tenth.

35)



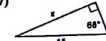
4.3

36)



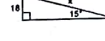
6.2

37)



13.9

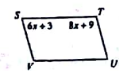
38)



69.5

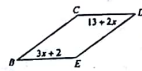
Find the measurement indicated in each parallelogram.

39) Find  $m\angle V$



12

40) Find  $m\angle B$

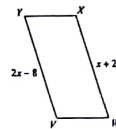


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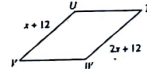
41) Find  $XW$

12



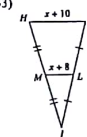
42) Find  $VU$

12

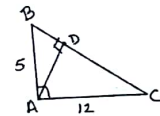


Solve for  $x$ .

43)



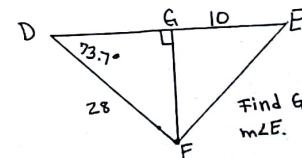
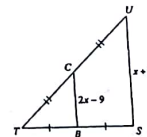
$HJ = \frac{4}{2}$   
 $ML = \frac{2}{2}$



Find  $m\angle C$  and  $AD$ .  
22.6' 4.6

Find the missing length indicated.

44) Find  $SU = 10$



Find  $GF$  and  $m\angle E$ .

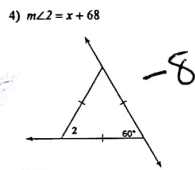
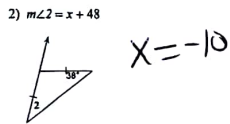
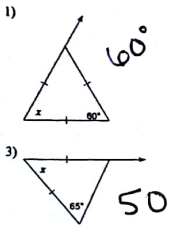
$m\angle E = 69.6'$   
 $GF = 26.87$

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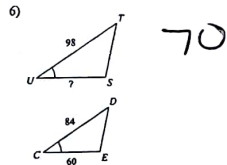
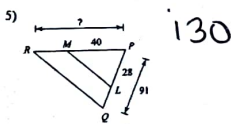
Analytic Geometry

SBM#1 Study Guide

Find the value of  $x$ .



Find the missing length. The triangles in each pair are similar.



Factor the common factor out of each expression.

7)  $35c^4a + 40c^3b^2 + 50c^4$   $5c^3(7ac + 8b^2 + 10c)$

Factor each completely.

8)  $5x^2 + 15x$   $5x(x+3)$

9)  $3b^3 + 15b^2 - 6b$   $3b(b^2 + 5b - 2)$

10)  $12p^2 + 4p - 8$

11)  $2n^3 + 7n^2 - 49n^2$   $n^2(2n-7)(n+7)$

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12)  $b^2 + 16b + 60$   
 $(b+10)(b+6)$

13)  $x^2 - 19x + 90$   
 $(x-10)(x-9)$

14)  $2m^2 - 18$   
 $2(m^2 - 9)$   
 $2(m+3)(m-3)$

15)  $25n^4 - 4$   
 $(5n^2+2)(5n^2-2)$

Name the type of Quadratic Expression (PST or DOTS) and Factor each completely.

16)  $25m^2 - 1$   $(5m+1)(5m-1)$   
 DOTS

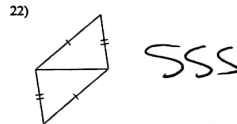
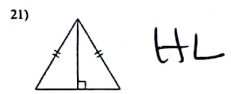
17)  $9n^2 - 24n + 16$   $(3n-4)(3n-4)$   
 PST

Simplify each expression.

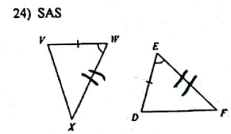
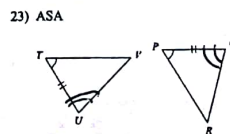
18)  $(6 + n^3 - 3n) - (8 - 4n + 8n^4)$   
 $-8n^4 + n^3 + n - 2$

19)  $(6n^3 + 5n^2 + 7) + (2n^2 - 3 + n^4)$   
 $7n^3 + 7n^2 + 2$

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



State what additional information is required in order to know that the triangles are congruent for the reason given.



$\angle U \cong \angle Q$

$\overline{WX} \cong \overline{EF}$

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