

unit 6

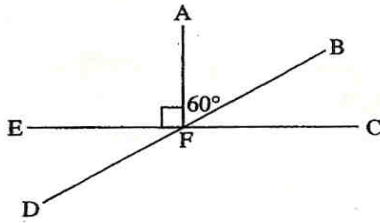
geometry

## 6-1 Angles



## 6-1 ANGLES

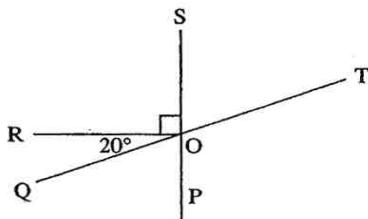
1.



Name: \_\_\_\_\_

- a) 3 acute  $\angle$ s \_\_\_\_\_
- b) 3 obtuse  $\angle$ s \_\_\_\_\_
- c) 2 right  $\angle$ s \_\_\_\_\_
- d) 2 straight  $\angle$ s \_\_\_\_\_
- e) an  $\angle$  of  $30^\circ$  \_\_\_\_\_
- f) an  $\angle$  of  $150^\circ$  \_\_\_\_\_
- g) an  $\angle$  of  $120^\circ$  \_\_\_\_\_
- h) an  $\angle$  vertically opposite to  $\angle EFD$  \_\_\_\_\_
- i) an  $\angle$  congruent to  $\angle AFC$  \_\_\_\_\_

2.

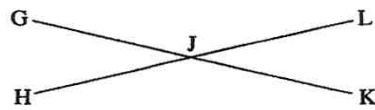


Name: \_\_\_\_\_

- a) an  $\angle$  complementary to  $\angle POQ$  \_\_\_\_\_
- b) an  $\angle$  supplementary to  $\angle QOR$  \_\_\_\_\_
- c) an  $\angle$  supplementary to  $\angle SOT$  \_\_\_\_\_
- d) an  $\angle$  supplementary to  $\angle ROS$  \_\_\_\_\_

- e) an  $\angle$  vertically opposite to  $\angle SOQ$  \_\_\_\_\_
- f) an  $\angle$  vertically opposite to  $\angle QOP$  \_\_\_\_\_
- g) an  $\angle$  congruent to  $\angle ROS$  \_\_\_\_\_
- h) an  $\angle$  of  $110^\circ$  \_\_\_\_\_
- i) an  $\angle$  of  $70^\circ$  \_\_\_\_\_
- j) an  $\angle$  of  $160^\circ$  \_\_\_\_\_

3.

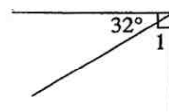


Name: \_\_\_\_\_

- a) 2 pairs of vertically opposite  $\angle$ s \_\_\_\_\_
- b) 2  $\angle$ s supplementary to  $\angle LJK$  \_\_\_\_\_
- c) 2 straight  $\angle$ s \_\_\_\_\_
- d) an  $\angle$  congruent to  $\angle GJL$  \_\_\_\_\_

4. Find the measure of each required angle.

a)



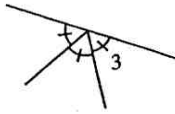
$\angle 1 =$  \_\_\_\_\_

b)



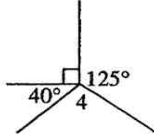
$\angle 2 =$  \_\_\_\_\_

c)



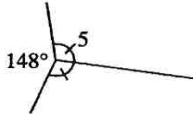
$\angle 3 = \underline{\hspace{2cm}}$

d)



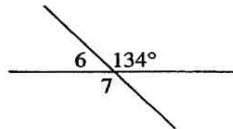
$\angle 4 = \underline{\hspace{2cm}}$

e)



$\angle 5 = \underline{\hspace{2cm}}$

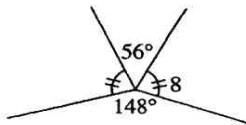
f)



$\angle 6 = \underline{\hspace{2cm}}$

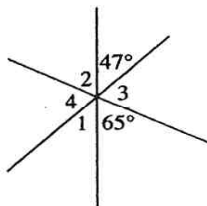
$\angle 7 = \underline{\hspace{2cm}}$

g)



$\angle 8 = \underline{\hspace{2cm}}$

h)



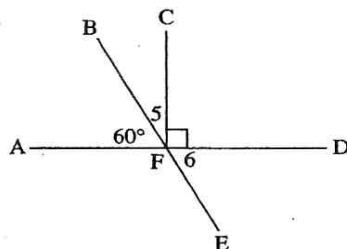
$\angle 1 = \underline{\hspace{2cm}}$

$\angle 2 = \underline{\hspace{2cm}}$

$\angle 3 = \underline{\hspace{2cm}}$

$\angle 4 = \underline{\hspace{2cm}}$

i)

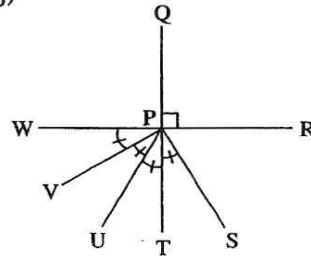


$\angle 5 = \underline{\hspace{2cm}}$

$\angle 6 = \underline{\hspace{2cm}}$

$\angle BFD = \underline{\hspace{2cm}}$

j)



$\angle WPT = \underline{\hspace{2cm}}$

$\angle WPV = \underline{\hspace{2cm}}$

$\angle VPT = \underline{\hspace{2cm}}$

$\angle VPS = \underline{\hspace{2cm}}$

$\angle RPS = \underline{\hspace{2cm}}$

$\angle WPS = \underline{\hspace{2cm}}$

$\angle QPS = \underline{\hspace{2cm}}$

5. True or false?

a) Vertically opposite angles can be right angles.

b) Two acute angles can be complementary.

c) Two obtuse angles can be supplementary.

d) Two congruent angles can be complementary.

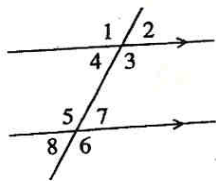
6. Find the measures of  $\angle A$  and  $\angle B$  if  $\angle A$  and  $\angle B$  are complementary anda)  $\angle A = \angle B$ b)  $\angle A$  is twice  $\angle B$ c)  $\angle A$  is  $20^\circ$  more than  $\angle B$ d)  $\angle A$  is  $10^\circ$  less than  $\angle B$ 7. Find the measures of  $\angle P$  and  $\angle Q$  if  $\angle P$  and  $\angle Q$  are supplementary anda)  $\angle P = \angle Q$ b)  $\angle P$  is twice  $\angle Q$ c)  $\angle P$  is four times  $\angle Q$ d)  $\angle P$  is  $46^\circ$  less than  $\angle Q$

## **6-2 Parallel Lines and Transversals**



## 6-2 PARALLEL LINES AND TRANSVERSALS

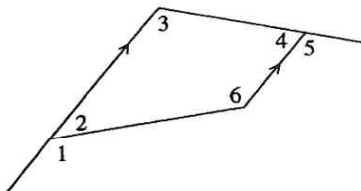
1.



Name an angle that is:

- a) vertically opposite to  $\angle 3$  \_\_\_\_\_
- b) corresponding to  $\angle 5$  \_\_\_\_\_
- c) alternate interior to  $\angle 4$  \_\_\_\_\_
- d) interior on the same side of the transversal to  $\angle 7$  \_\_\_\_\_
- e) corresponding to  $\angle 6$  \_\_\_\_\_
- f) alternate interior to  $\angle 5$  \_\_\_\_\_
- g) interior on the same side of the transversal to  $\angle 4$  \_\_\_\_\_

2.

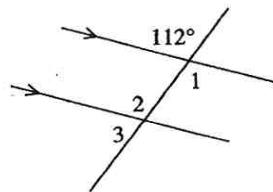


Name an angle that is:

- a) alternate interior to  $\angle 1$  \_\_\_\_\_
- b) corresponding to  $\angle 3$  \_\_\_\_\_
- c) supplementary to  $\angle 1$  \_\_\_\_\_
- d) supplementary to  $\angle 6$  \_\_\_\_\_
- e) interior on the same side of the transversal to  $\angle 3$  \_\_\_\_\_

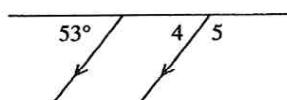
3. Find the measure of each required angle.

a)



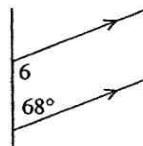
- $\angle 1 =$  \_\_\_\_\_
- $\angle 2 =$  \_\_\_\_\_
- $\angle 3 =$  \_\_\_\_\_

b)



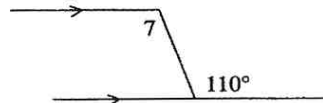
- $\angle 4 =$  \_\_\_\_\_
- $\angle 5 =$  \_\_\_\_\_

c)



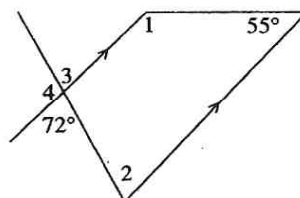
- $\angle 6 =$  \_\_\_\_\_

d)



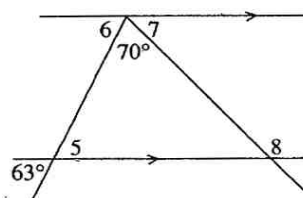
- $\angle 7 =$  \_\_\_\_\_

e)



- $\angle 1 =$  \_\_\_\_\_
- $\angle 2 =$  \_\_\_\_\_
- $\angle 3 =$  \_\_\_\_\_
- $\angle 4 =$  \_\_\_\_\_

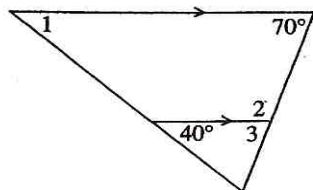
f)



- $\angle 5 =$  \_\_\_\_\_
- $\angle 6 =$  \_\_\_\_\_
- $\angle 7 =$  \_\_\_\_\_
- $\angle 8 =$  \_\_\_\_\_



g)

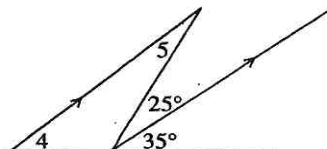


$\angle 1 = \underline{\hspace{2cm}}$

$\angle 2 = \underline{\hspace{2cm}}$

$\angle 3 = \underline{\hspace{2cm}}$

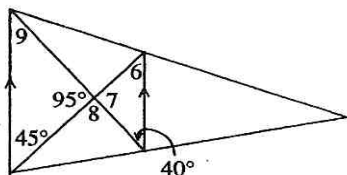
h)



$\angle 4 = \underline{\hspace{2cm}}$

$\angle 5 = \underline{\hspace{2cm}}$

i)



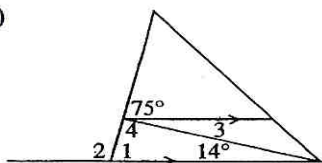
$\angle 6 = \underline{\hspace{2cm}}$

$\angle 7 = \underline{\hspace{2cm}}$

$\angle 8 = \underline{\hspace{2cm}}$

$\angle 9 = \underline{\hspace{2cm}}$

j)



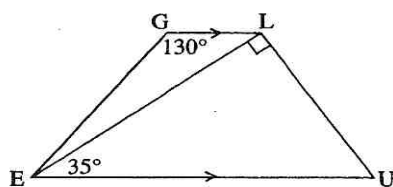
$\angle 1 = \underline{\hspace{2cm}}$

$\angle 2 = \underline{\hspace{2cm}}$

$\angle 3 = \underline{\hspace{2cm}}$

$\angle 4 = \underline{\hspace{2cm}}$

k)



$\angle GLE = \underline{\hspace{2cm}}$

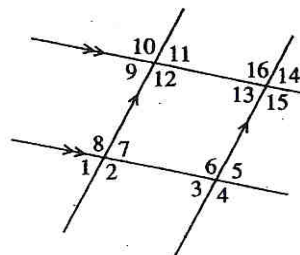
$\angle GLU = \underline{\hspace{2cm}}$

$\angle LUE = \underline{\hspace{2cm}}$

$\angle GEU = \underline{\hspace{2cm}}$

$\angle GEL = \underline{\hspace{2cm}}$

4.



Name: \_\_\_\_\_

a) an  $\angle$  vertically opposite to  $\angle 10$  \_\_\_\_\_

b) 2  $\angle$ s alternate interior to  $\angle 13$  \_\_\_\_\_

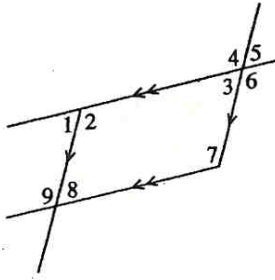
c) 2  $\angle$ s corresponding to  $\angle 1$  \_\_\_\_\_

d) 2 interior  $\angle$ s on the same side of the transversal to  $\angle 6$  \_\_\_\_\_

e) 3  $\angle$ s supplementary to  $\angle 8$  \_\_\_\_\_

f) 3  $\angle$ s congruent to  $\angle 7$  \_\_\_\_\_

5.



Classify each pair of angles below by the most appropriate letter.

S = supplementary  $\angle$ s

V = vertically opposite  $\angle$ s

C = corresponding  $\angle$ s

A = alternate interior  $\angle$ s

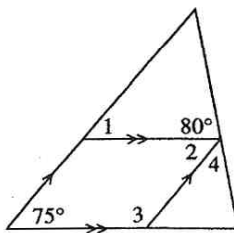
I = interior  $\angle$ s on the same side of the transversal

N = none of these

- a)  $\angle 1$  and  $\angle 3$  \_\_\_\_\_ f)  $\angle 1$  and  $\angle 6$  \_\_\_\_\_  
 b)  $\angle 9$  and  $\angle 8$  \_\_\_\_\_ g)  $\angle 2$  and  $\angle 8$  \_\_\_\_\_  
 c)  $\angle 4$  and  $\angle 6$  \_\_\_\_\_ h)  $\angle 2$  and  $\angle 4$  \_\_\_\_\_  
 d)  $\angle 7$  and  $\angle 6$  \_\_\_\_\_ i)  $\angle 7$  and  $\angle 8$  \_\_\_\_\_  
 e)  $\angle 4$  and  $\angle 7$  \_\_\_\_\_ j)  $\angle 8$  and  $\angle 3$  \_\_\_\_\_

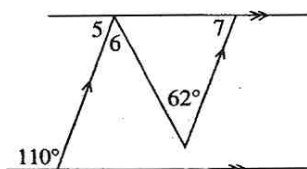
6. Find the measure of each numbered angle.

a)



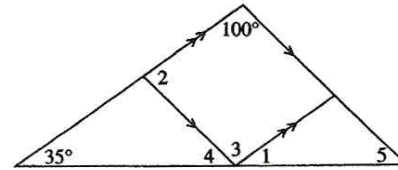
- $\angle 1 =$  \_\_\_\_\_  
 $\angle 2 =$  \_\_\_\_\_  
 $\angle 3 =$  \_\_\_\_\_  
 $\angle 4 =$  \_\_\_\_\_

b)



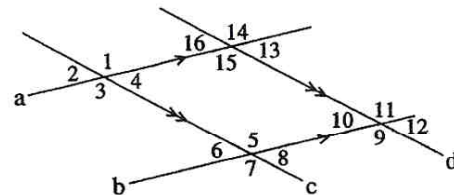
- $\angle 5 =$  \_\_\_\_\_  
 $\angle 6 =$  \_\_\_\_\_  
 $\angle 7 =$  \_\_\_\_\_

c)



- $\angle 1 =$  \_\_\_\_\_  
 $\angle 2 =$  \_\_\_\_\_  
 $\angle 3 =$  \_\_\_\_\_  
 $\angle 4 =$  \_\_\_\_\_  
 $\angle 5 =$  \_\_\_\_\_

7.



Name the two parallel segments and the transversal that form:

	Segments	Transversal
a) alternate interior $\angle$ s 3 and 5	_____	_____
b) corresponding $\angle$ s 5 and 11	_____	_____
c) interior $\angle$ s 13 and 11 on the same side of the transversal	_____	_____
d) alternate interior $\angle$ s 15 and 1	_____	_____

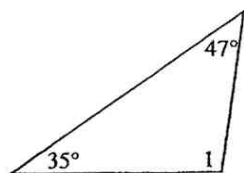
## 6-3 Triangles



## 6-3 TRIANGLES

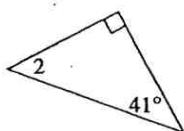
Find the measure of each numbered angle.

1.



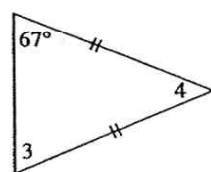
$\angle 1 = \underline{\hspace{2cm}}$

2.



$\angle 2 = \underline{\hspace{2cm}}$

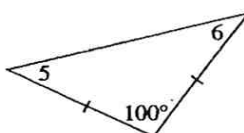
3.



$\angle 3 = \underline{\hspace{2cm}}$

$\angle 4 = \underline{\hspace{2cm}}$

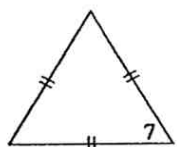
4.



$\angle 5 = \underline{\hspace{2cm}}$

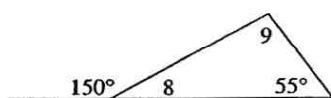
$\angle 6 = \underline{\hspace{2cm}}$

5.



$\angle 7 = \underline{\hspace{2cm}}$

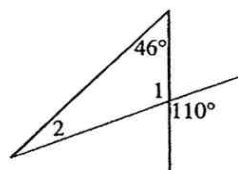
6.



$\angle 8 = \underline{\hspace{2cm}}$

$\angle 9 = \underline{\hspace{2cm}}$

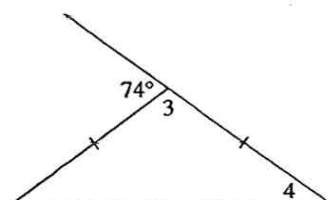
7.



$\angle 1 = \underline{\hspace{2cm}}$

$\angle 2 = \underline{\hspace{2cm}}$

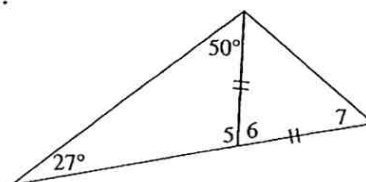
8.



$\angle 3 = \underline{\hspace{2cm}}$

$\angle 4 = \underline{\hspace{2cm}}$

9.

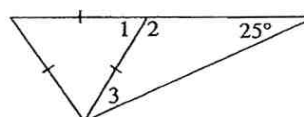


$\angle 5 = \underline{\hspace{2cm}}$

$\angle 6 = \underline{\hspace{2cm}}$

$\angle 7 = \underline{\hspace{2cm}}$

10.

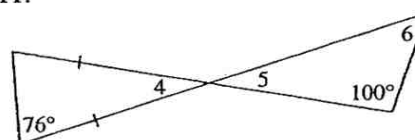


$\angle 1 = \underline{\hspace{2cm}}$

$\angle 2 = \underline{\hspace{2cm}}$

$\angle 3 = \underline{\hspace{2cm}}$

11.

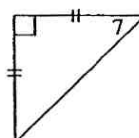


$\angle 4 = \underline{\hspace{2cm}}$

$\angle 5 = \underline{\hspace{2cm}}$

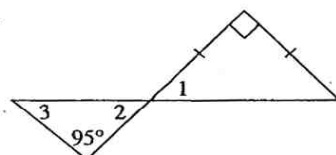
$\angle 6 = \underline{\hspace{2cm}}$

12.



$\angle 7 = \underline{\hspace{2cm}}$

13.

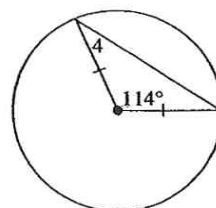


$\angle 1 = \underline{\hspace{2cm}}$

$\angle 2 = \underline{\hspace{2cm}}$

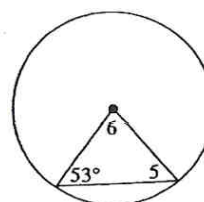
$\angle 3 = \underline{\hspace{2cm}}$

14.



$\angle 4 = \underline{\hspace{2cm}}$

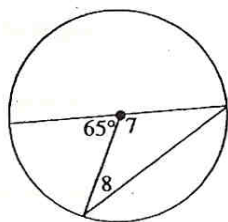
15.



$\angle 5 = \underline{\hspace{2cm}}$

$\angle 6 = \underline{\hspace{2cm}}$

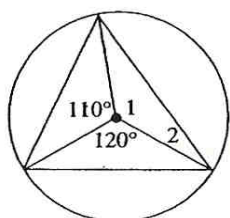
16.



$\angle 7 =$  \_\_\_\_\_

$\angle 8 =$  \_\_\_\_\_

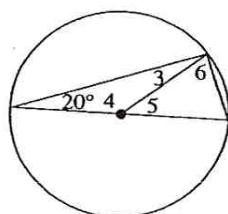
17.



$\angle 1 =$  \_\_\_\_\_

$\angle 2 =$  \_\_\_\_\_

18.



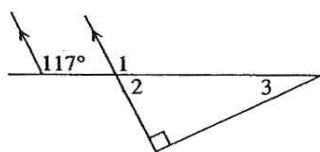
$\angle 3 =$  \_\_\_\_\_

$\angle 4 =$  \_\_\_\_\_

$\angle 5 =$  \_\_\_\_\_

$\angle 6 =$  \_\_\_\_\_

19.

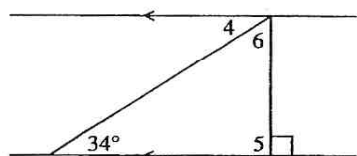


$\angle 1 =$  \_\_\_\_\_

$\angle 2 =$  \_\_\_\_\_

$\angle 3 =$  \_\_\_\_\_

20.

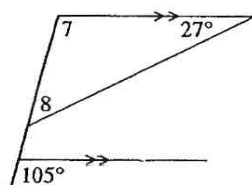


$\angle 4 =$  \_\_\_\_\_

$\angle 5 =$  \_\_\_\_\_

$\angle 6 =$  \_\_\_\_\_

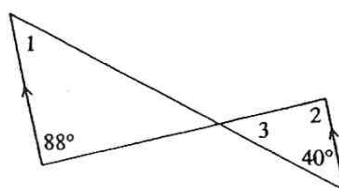
21.



$\angle 7 =$  \_\_\_\_\_

$\angle 8 =$  \_\_\_\_\_

22.

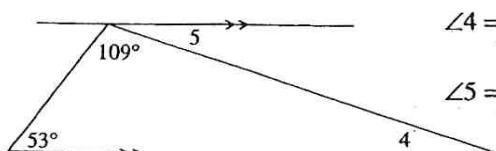


$\angle 1 =$  \_\_\_\_\_

$\angle 2 =$  \_\_\_\_\_

$\angle 3 =$  \_\_\_\_\_

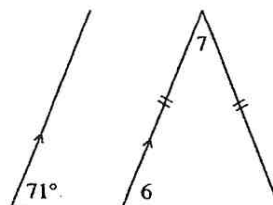
23.



$\angle 4 =$  \_\_\_\_\_

$\angle 5 =$  \_\_\_\_\_

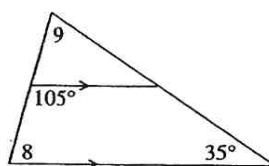
24.



$\angle 6 =$  \_\_\_\_\_

$\angle 7 =$  \_\_\_\_\_

25.



$\angle 8 =$  \_\_\_\_\_

$\angle 9 =$  \_\_\_\_\_

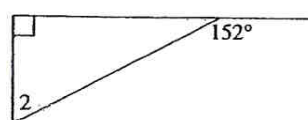
For questions 26 to 35, you may have to find the measures of other angles to determine the size of the numbered angle.

26.



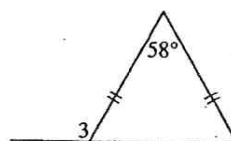
$\angle 1 =$  \_\_\_\_\_

27.

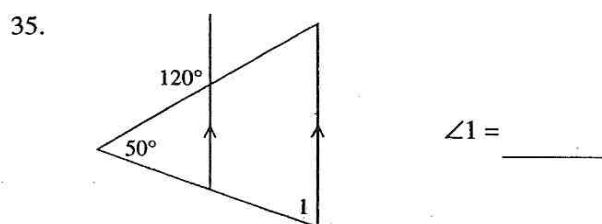
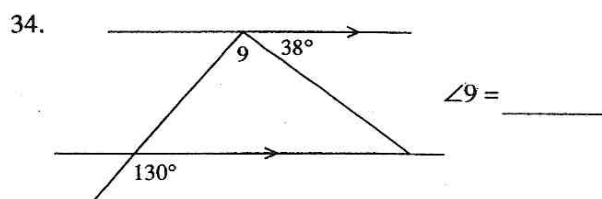
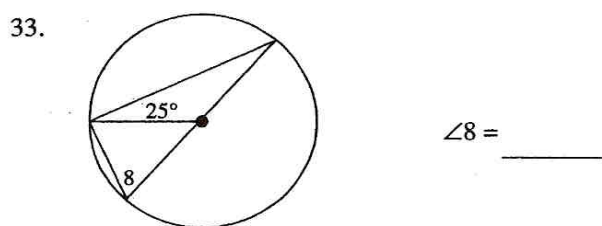
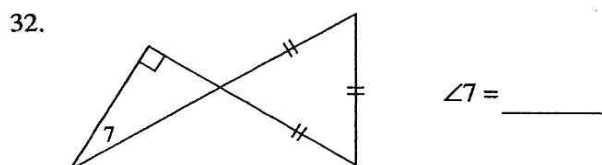
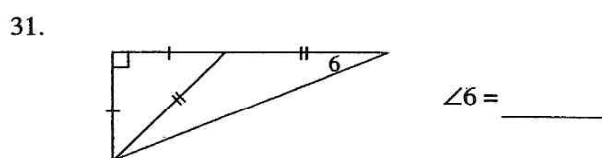
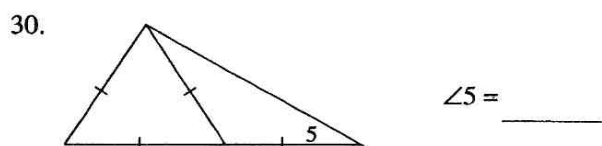
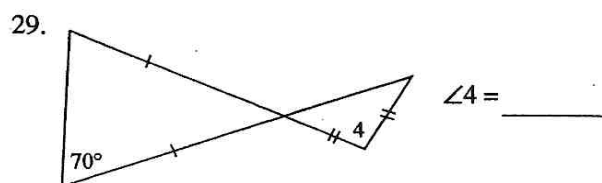


$\angle 2 =$  \_\_\_\_\_

28.



$\angle 3 =$  \_\_\_\_\_



36. Find the measures of the three angles of  $\triangle ABC$  if

a)  $\angle A$  is twice  $\angle B$  and  $\angle C$  is three times  $\angle B$ .

\_\_\_\_\_

b)  $\angle A = \angle B$  and  $\angle C$  is  $36^\circ$  more than  $\angle A$ .

\_\_\_\_\_

c)  $\angle B$  is twice  $\angle A$  and  $\angle C$  is  $10^\circ$  less than  $\angle B$ .

\_\_\_\_\_