

1. A line that intersects two other lines is called a transversal.

Think of each segment in the diagram as part of a line. Complete the statement with *parallel*, *skew* or *perpendicular*.

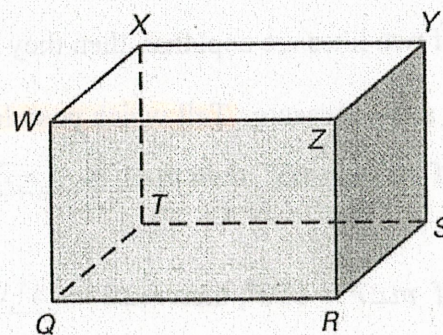
2.  $\overleftrightarrow{WZ}$  and  $\overleftrightarrow{ZR}$  are perpendicular

3.  $\overleftrightarrow{WZ}$  and  $\overleftrightarrow{ST}$  are parallel

4.  $\overleftrightarrow{QT}$  and  $\overleftrightarrow{YS}$  are skew

5. Plane WZR and plane SYZ are perpendicular

6. Plane RQT and plane YXW are parallel



Think of each segment in the diagram as part of a line. Which line(s) or plane(s) appear to fit the description?

7. Line(s) parallel to  $\overleftrightarrow{EH}$

$\overleftrightarrow{FG}$ ,  $\overleftrightarrow{CD}$ ,  $\overleftrightarrow{AB}$

8. Line(s) perpendicular to  $\overleftrightarrow{EH}$

$\overleftrightarrow{FE}$ ,  $\overleftrightarrow{GH}$ ,  $\overleftrightarrow{AE}$ ,  $\overleftrightarrow{BH}$

9. Line(s) skew to  $\overleftrightarrow{CD}$  and containing point F

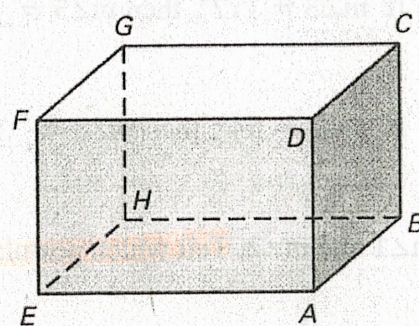
$\overleftrightarrow{FE}$

10. Plane(s) perpendicular to plane AEH

AEF, EFG, ABC, HBC

11. Plane(s) parallel to plane FGC

HBA



Use the markings in the diagram.

12. Name a pair of parallel lines.

$\overleftrightarrow{MK}$  and  $\overleftrightarrow{LS}$

13. Name a pair of perpendicular lines

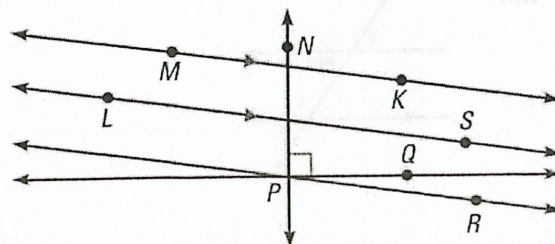
$\overleftrightarrow{NP}$  and  $\overleftrightarrow{PQ}$

14. Is  $\overleftrightarrow{PR} \parallel \overleftrightarrow{KM}$ . Explain

No

15. Is  $\overleftrightarrow{PR} \perp \overleftrightarrow{NP}$ . Explain

No



Complete the statement with sometimes, always or never

16. If two lines are parallel, then they never intersect.

17. If one line is skew to another, then they are never coplanar.

18. If two lines intersect, then they are sometimes perpendicular.

19. If two lines are coplanar, then they are sometimes parallel.

Find the angle measure. **Tell which postulate or theorem you use.** (each problem has new measures)

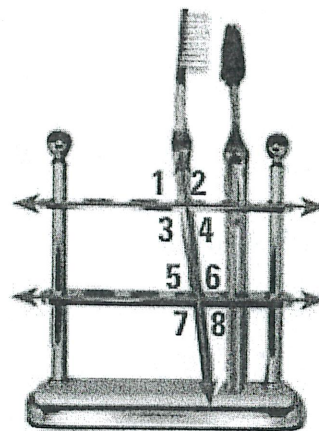
20. If  $m\angle 4 = 65^\circ$ , then  $m\angle 1 = \underline{65^\circ}$

21. If  $m\angle 7 = 110^\circ$ , then  $m\angle 2 = \underline{110^\circ}$

22. If  $m\angle 5 = 71^\circ$ , then  $m\angle 4 = \underline{71^\circ}$

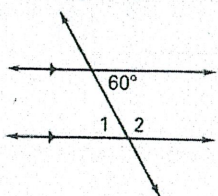
23. If  $m\angle 3 = 117^\circ$ , then  $m\angle 5 = \underline{63^\circ}$

24. If  $m\angle 8 = 54^\circ$ , then  $m\angle 3 = \underline{126^\circ}$



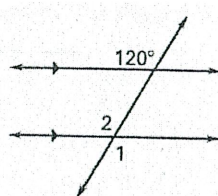
Find  $m\angle 1$  and  $m\angle 2$ . **Tell which postulate or theorem you use.**

25.



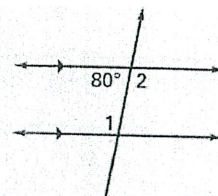
$m\angle 1 = 60^\circ$ ,  $m\angle 2 = 120^\circ$

26.



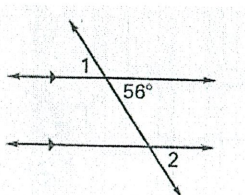
$m\angle 1 = 120^\circ$ ,  $m\angle 2 = 120^\circ$

27.



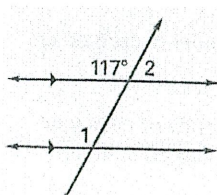
$m\angle 1 = 100^\circ$ ,  $m\angle 2 = 100^\circ$

28.



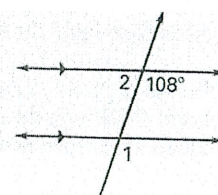
$m\angle 1 = 56^\circ$ ,  $m\angle 2 = 56^\circ$

29.



$m\angle 1 = 117^\circ$ ,  $m\angle 2 = 63^\circ$

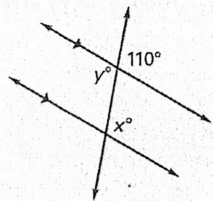
30.



$m\angle 1 = 108^\circ$ ,  $m\angle 2 = 72^\circ$

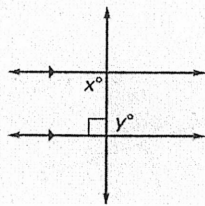
Find values for  $x$  and  $y$ .

31.



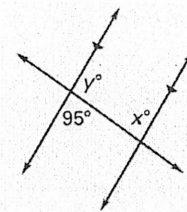
$$\underline{x = 110^\circ, y = 110^\circ}$$

32.



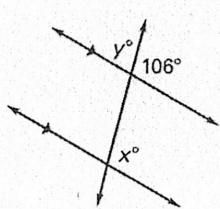
$$\underline{x = 90^\circ, y = 90^\circ}$$

33.



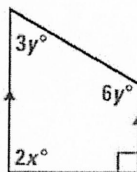
$$\underline{x = 95^\circ, y = 85^\circ}$$

34.



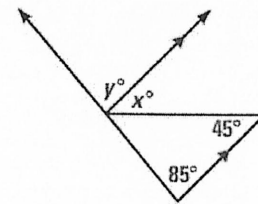
$$\underline{x = 106^\circ, y = 74^\circ}$$

35.



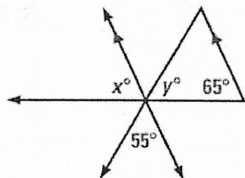
$$\underline{x = 45^\circ, y = 20^\circ}$$

36.



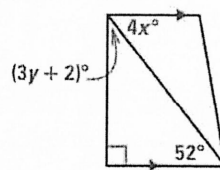
$$\underline{x = 45^\circ, y = 85^\circ}$$

37.



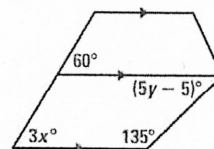
$$\underline{x = 65^\circ, y = 60^\circ}$$

38.



$$\underline{x = 13^\circ, y = 12^\circ}$$

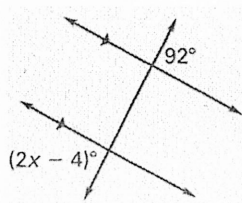
39.



$$\underline{x = 20^\circ, y = 10^\circ}$$

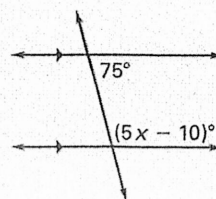
Find the value of  $x$ .

40.



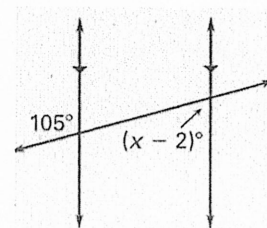
$$\underline{x = 48^\circ}$$

41.



$$\underline{x = 23^\circ}$$

42.



$$\underline{x = 77^\circ}$$

