

# Cumulative Review

For use after Chapters 1–3

In the diagram of collinear points,  $EH = HI$ ,  $EF = FG = GH$ . If  $GH = 4$ , find each length. (1.3)

1.  $EG$
2.  $HI$
3.  $GI$
4.  $EI$



Find the coordinates of  $B$  if  $M$  is the midpoint of  $\overline{AB}$ . (1.5)

5.  $A(7, 5)$ ,  $M(9, 7)$
6.  $A(-3, 5)$ ,  $M(1, 9)$

Write the (a) inverse and (b) converse of the statement. (2.2)

7. If an angle measures  $120^\circ$ , then it is an obtuse angle.
8. If an angle measures  $90^\circ$ , then it is not an acute angle.

Using  $p$  and  $q$ , write the symbolic statement in words. (2.3)

$p$ : It is raining.       $q$ : The sun is not shining.

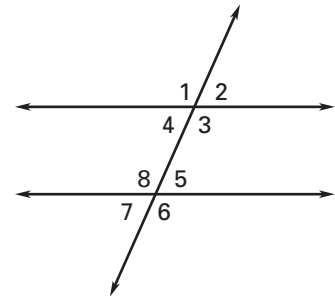
9.  $q \rightarrow p$
10.  $\sim p \rightarrow \sim q$

Solve the equation and write a reason for each step. (2.4)

11.  $3x - 15 = 45$
12.  $2(z + 5) = 26$

Complete the statement with *corresponding*, *alternate interior*, *alternate exterior*, or *consecutive interior*. (3.1)

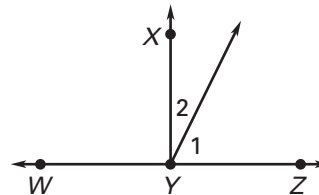
13.  $\angle 1$  and  $\angle 6$  are \_\_\_\_\_ angles.
14.  $\angle 4$  and  $\angle 8$  are \_\_\_\_\_ angles.
15.  $\angle 2$  and  $\angle 5$  are \_\_\_\_\_ angles.
16.  $\angle 3$  and  $\angle 8$  are \_\_\_\_\_ angles.



Develop a flow proof to prove the following. (3.2)

17. Given:  $\overrightarrow{YX} \perp \overrightarrow{WZ}$

Prove:  $m\angle 1 + m\angle 2 = m\angle WYX$



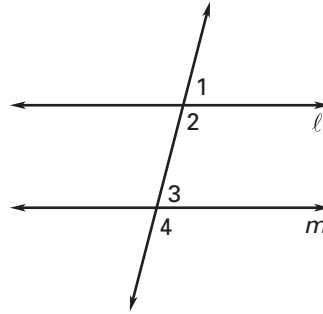
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Prove using the two-column method. (3.3)

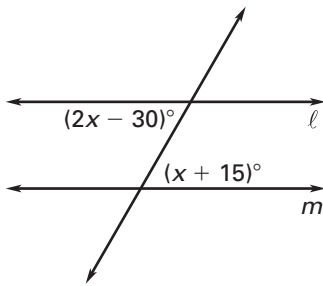
18. Given:  $\ell \parallel m$

Prove:  $\angle 1$  and  $\angle 4$  are supplementary

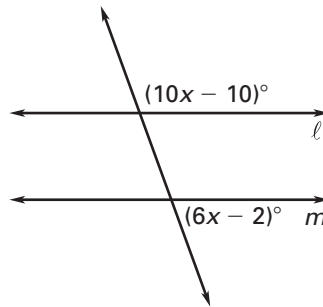


Find the value of  $x$  that makes  $\ell \parallel m$ . (3.4)

19.

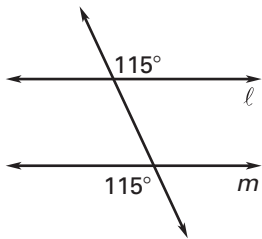


20.

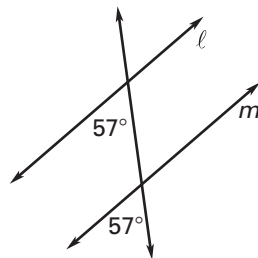


State the theorem or postulate you would use to show  $\ell \parallel m$ . (3.5)

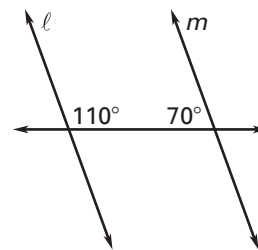
21.



22.



23.



Determine if  $\overline{AB} \parallel \overline{CD}$ . (3.6)

24.  $A(0, 5), B(2, 3)$

$C(-4, 2), D(-1, -2)$

25.  $A(0, 3), B(-2, 0)$

$C(0, -4), D(2, -1)$

Find the slope of the line that is perpendicular to  $\overline{AB}$ . (3.7)

26.  $A(7, -1), B(4, 2)$

27.  $A(-3, 6), B(7, 2)$