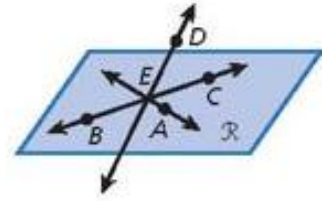


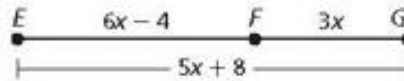
Show your work on a separate piece of paper.

1. Draw and label plane \mathcal{N} containing two lines that intersect at B .



Use the figure to name each of the following.

2. four noncoplanar points 3. line containing B and E
 4. The coordinate of A is -3 , and the coordinate of B is 0.5 . Find AB .
 5. E , F , and G represent mile markers along a straight highway. Find EF .



6. J is the midpoint of \overline{HK} . Find HJ , JK , and HK

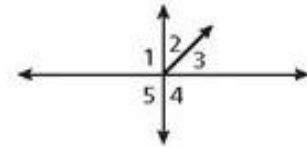


Classify each angle by its measure.

7. $m\angle LMP = 70^\circ$ 8. $m\angle QMN = 90^\circ$ 9. $m\angle PMN = 125^\circ$
 10. \overrightarrow{TV} bisects $\angle RTS$. If the $m\angle RTV = (16x - 6)^\circ$ and $m\angle VTS = (13x + 9)^\circ$, what is the $m\angle RTV$?
 11. An angle's measure is 5 degrees less than 3 times the measure of its supplement. Find the measure of the angle and its supplement.

Tell whether the angles are only adjacent, adjacent and form a linear pair, or not adjacent.

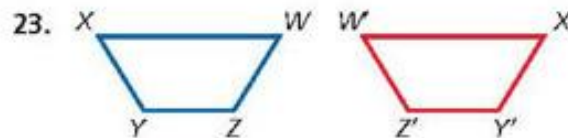
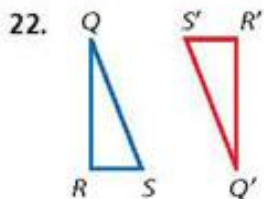
12. $\angle 2$ and $\angle 3$ 13. $\angle 4$ and $\angle 5$ 14. $\angle 1$ and $\angle 4$
 15. Find the perimeter and area of a rectangle with $b = 8$ ft and $h = 4$ ft.



Find the circumference and area of each circle to the nearest tenth.

16. $r = 15$ m 17. $d = 25$ ft 18. $d = 2.8$ cm
 19. Find the midpoint of the segment with endpoints $(-4, 6)$ and $(3, 2)$.
 20. M is the midpoint of \overline{LN} . M has coordinates $(-5, 1)$, and L has coordinates $(2, 4)$. Find the coordinates of N .
 21. Given $A(-5, 1)$, $B(-1, 3)$, $C(1, 4)$, and $D(4, 1)$, is $\overline{AB} \cong \overline{CD}$? Explain.

Identify each transformation. Then use arrow notation to describe the transformation.



24. A designer used the translation $(x, y) \rightarrow (x + 3, y - 3)$ to transform a triangular-shaped pin ABC . Find the coordinates and draw the image of $\triangle ABC$.

