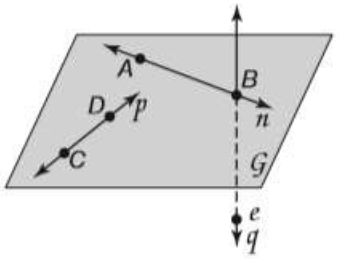
Lesson 1.1 Practice: Points Planes and Lines

Refer to the figure.



1. Name a line that contains point e.

2. Name a point contained in line n.

3. What is another name for line p?

4. Name the plane containing lines n and p.

Draw and label a figure for each relationship.

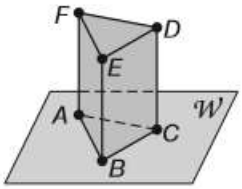
5. Point K lies on $\overleftrightarrow{RT}$.

6. Plane $\mathcal{J}$ contains line s.

7. $\overleftrightarrow{YP}$ lies in plane $\mathcal{B}$ and contains point C, but does not contain point H.

8. Lines q and f intersect at point Z in plane $\mathcal{U}$.

Refer to the figure.



9. How many planes are shown in the figure?

10. How many of the planes contain points F and E?

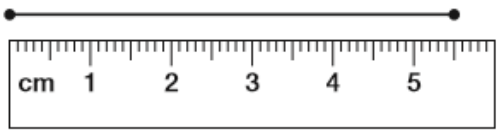
11. Name four points that are coplanar.

12. Are points A, B, and C coplanar? Explain.

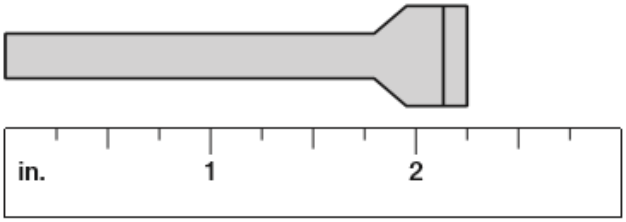
Lesson 1.2 Practice: Line Segments

Find the length of each line segment or object.

1.

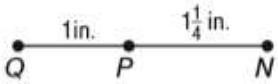


2.

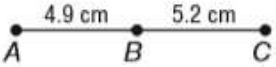


Find the measurement of each segment. Assume that each figure is not drawn to scale.

3. $\overline{NQ}$



4. $\overline{AC}$



5. $\overline{GH}$

ALGEBRA **Find the value of x and YZ if Y is between X and Z.**

6. $XY = 5x$, $YZ = x$, and $XY = 25$

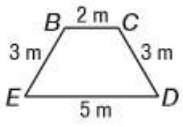
7. $XY = 12$, $YZ = 2x$, and $XZ = 28$

8. $XY = 4x$, $YZ = 3x$, and $XZ = 42$

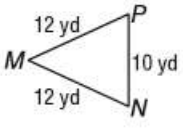
9. $XY = 2x + 1$, $YZ = 6x$, and $XZ = 81$

Determine whether each pair of segments is congruent.

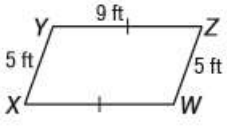
10. $\overline{BE}$, $\overline{CD}$



11. $\overline{MP}$, $\overline{NP}$

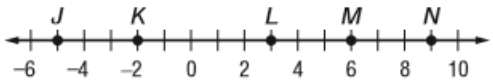


12. $\overline{WX}$, $\overline{WZ}$



Lesson 1.3a Practice: Distance

Use the number line to find each measure.



1. LN

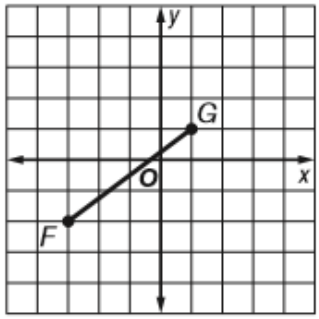
2. JL

3. KN

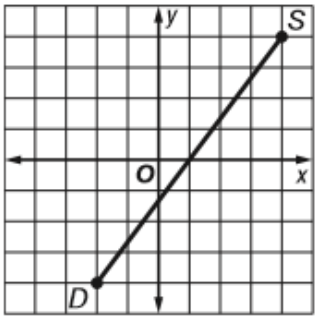
4. MN

Find the distance between each pair of points.

5.



6.



7. $K(2, 3)$, $F(4, 4)$

8. $C(-3, -1)$, $Q(-2, 3)$

9. $Y(2, 0)$, $P(2, 6)$

10. $W(-2, 2)$, $R(5, 2)$

11. $A(-7, -3)$, $B(5, 2)$

12. $C(-3, 1)$, $Q(2, 6)$

Lesson 1.3b Practice: Midpoint

Use the number line to find the coordinate of the midpoint of each segment.

13. $\overline{DE}$

14. $\overline{BC}$

15. $\overline{BD}$

16. $\overline{AD}$

Find the coordinates of the midpoint of a segment with the given endpoints.

17. $T(3, 1), U(5, 3)$

18. $J(-4, 2), F(5, -2)$

Find the coordinates of the missing endpoint if P is the midpoint of $\overline{NQ}$.

19. $N(2, 0), P(5, 2)$

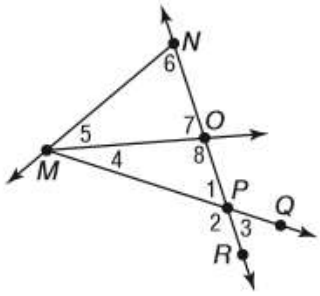
20. $N(5, 4), P(6, 3)$

21. $Q(3, 9), P(-1, 5)$

22. Calvin's home is located at the midpoint between Fast Pizza and Pizza Now. Fast Pizza is a quarter mile away from Calvin's home. How far away is Pizza Now from Calvin's home? How far apart are the two pizzerias?

Lesson 1.4 Practice: Angles

For Exercises 1–10, use the figure at the right.



Name the vertex of each angle.

1. $\angle 5$
2. $\angle 3$
3. $\angle 8$
4. $\angle NMP$

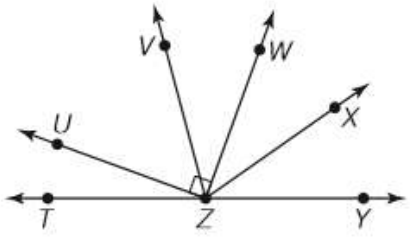
Name the sides of each angle.

5. $\angle 6$
6. $\angle 2$
7. $\angle MOP$
8. $\angle OMN$

Write another name for each angle.

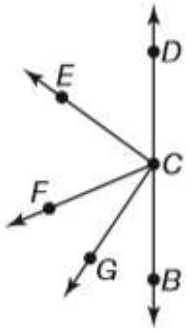
9. $\angle QPR$
10. $\angle 1$

Classify each angle as *right*, *acute*, or *obtuse*. Then use a protractor to measure the angle to the nearest degree.



11. $\angle UZW$
12. $\angle YZW$
13. $\angle TZW$
14. $\angle UZT$

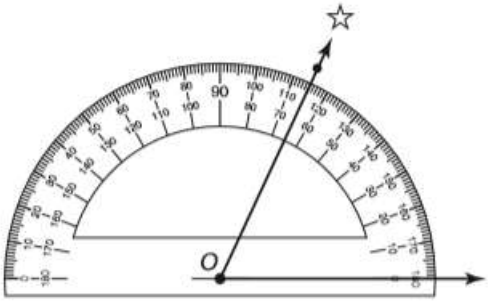
ALGEBRA In the figure, $\overrightarrow{CB}$ and $\overrightarrow{CD}$ are opposite rays, $\overrightarrow{CE}$ bisects $\angle DCF$, and $\overrightarrow{CG}$ bisects $\angle FCB$.



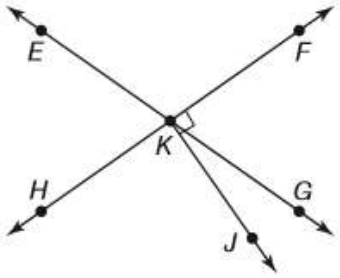
15. If $m\angle DCE = 4x + 15$ and $m\angle ECF = 6x - 5$, find $m\angle DCE$.

16. If $m\angle FCG = 9x + 3$ and $m\angle GCB = 13x - 9$, find $m\angle GCB$.

17. **STARS** Melinda wants to know the angle of elevation of a star above the horizon. Based on the figure, what is the angle of elevation? Is this angle an acute, right, or obtuse angle?



For Exercises 1–6, use the figure at the right. Name an angle or angle pair that satisfies each condition.



1. Name two acute vertical angles.

2. Name two obtuse vertical angles.

3. Name a linear pair.

4. Name two acute adjacent angles.

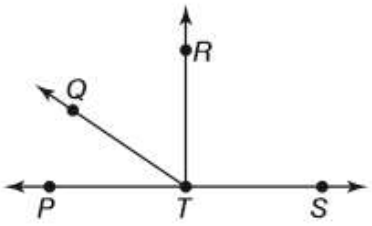
5. Name an angle complementary to $\angle EKH$.

6. Name an angle supplementary to $\angle FKG$.

7. Find the measures of an angle and its complement if one angle measures 24 degrees more than the other.

8. The measure of the supplement of an angle is 36 less than the measure of the angle. Find the measures of the angles.

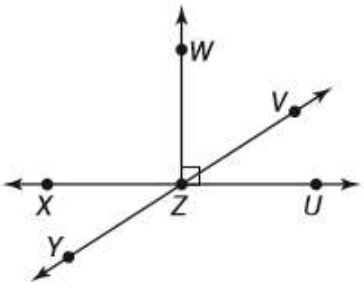
ALGEBRA For Exercises 9–10, use the figure at the right.



9. If $m\angle RTS = 8x + 18$, find the value of x so that $\overrightarrow{TR} \perp \overrightarrow{TS}$.

10. If $m\angle PTQ = 3y - 10$ and $m\angle QTR = y$, find the value of y so that $\angle PTR$ is a right angle.

Determine whether each statement can be assumed from the figure. Explain.



11. $\angle WZU$ is a right angle.

12. $\angle YZU$ and $\angle UZV$ are supplementary.

13. $\angle VZU$ is adjacent to $\angle YZX$.