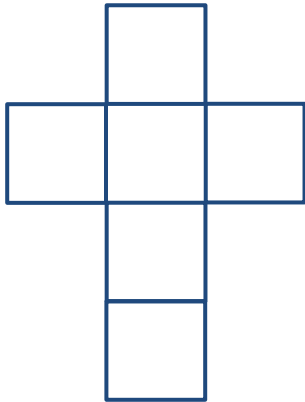


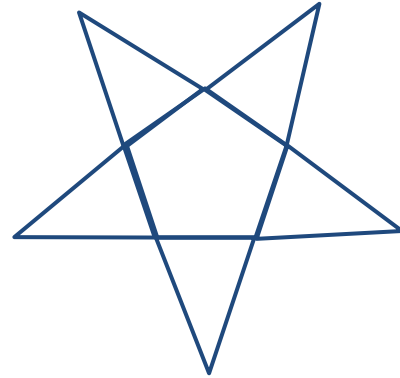
Unit 1 - Geometry Basics Review Guide

Name a three-dimensional figure that can be formed from each net.

1.

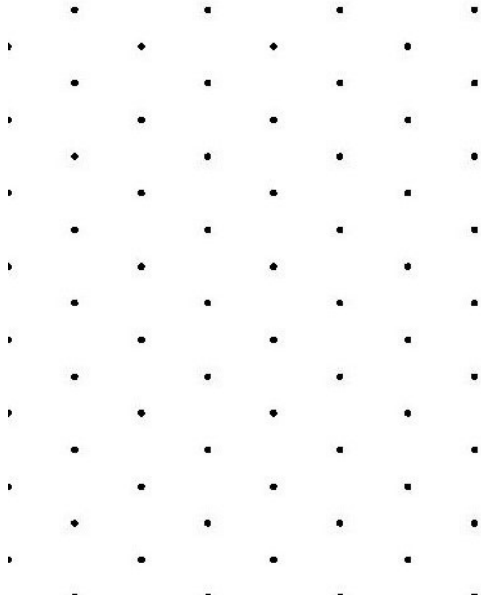
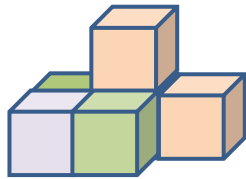


2.

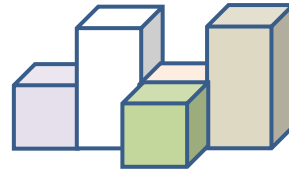


Make an isometric drawing of each on isometric dot paper.

3.



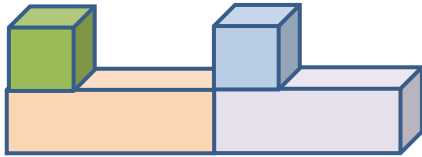
4.



Unit 1 - Geometry Basics Review Guide

Make an orthographic drawing for each structure.

5.

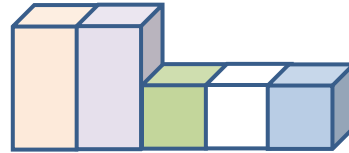


Top view

Front view

Right-side view

6.



Top view

Front view

Right-side view

Draw and label figure for each relationship.

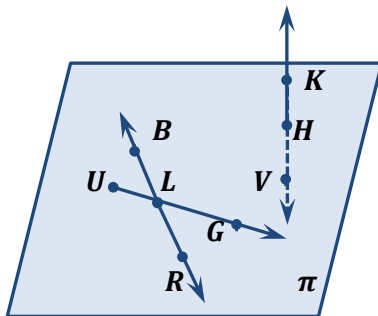
7. Ray \overrightarrow{FK} and ray \overrightarrow{FN}

8. Line \overleftrightarrow{EY}

9. Line segment \overline{TR}

Refer to each figure.

10.



Name three line segments.

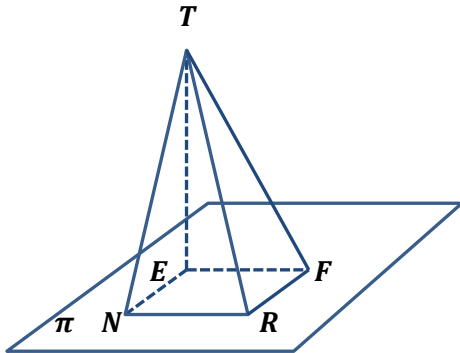
Name the intersection of plane π and line \overleftrightarrow{KV} .

Name the two opposite rays at point L .

Name the intersection of line \overleftrightarrow{BR} and ray \overrightarrow{UG} .

Unit 1 - Geometry Basics Review Guide

11.



Name three planes.

Name a point that is coplanar with R and F

Name the intersection of plane π and plane NET .

Name the intersection of plane NRT and plane RFT .

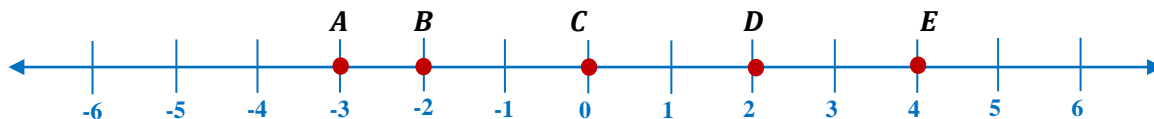
Draw and label figure for each relationship.

12. Lines \overleftrightarrow{AB} and \overleftrightarrow{RT} intersect in point S in plane π .
 Lines \overleftrightarrow{FI} and \overleftrightarrow{RT} intersect in point U .
 The intersection of plane π and line \overleftrightarrow{FI} is point U .

13. The intersection of plane π and plane ε is line \overleftrightarrow{AB} .

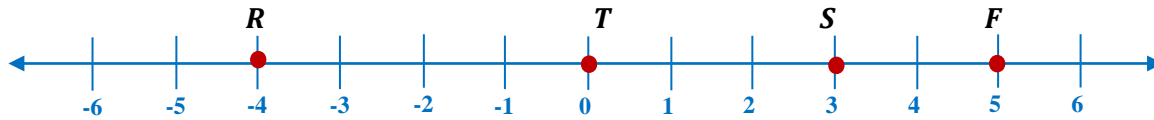
Find the length of each segment using number line. Determine whether each of the segments is congruent.

14. $AB = ?$ $BC = ?$ $CD = ?$ $BE = ?$



Unit 1 - Geometry Basics Review Guide

- 15.
- $RT = ?$
- $RS = ?$
- $SF = ?$
- $TF = ?$



Find the value of x and then, find the length of each segment using segment addition postulate.

16. Point
- F
- is between points
- R
- and
- O
- .

The points are collinear.

$$RF = 2x - 4 \quad FO = 2x - 5 \quad RO = 15$$

$$\overline{RF} = ? \quad \overline{FO} = ?$$

17. Point
- K
- is between points
- E
- and
- M
- .

The points are collinear.

$$EM = 2x - 2, \quad EK = x + 1, \quad KM = 11$$

$$\overline{EK} = ? \quad \overline{EM} = ?$$

Find the length of each segment. Draw a diagram to represent the situation.

18. Point
- J
- is midpoint of segment
- \overline{TN}
- .

$$\overline{TH} = 22 \text{ cm}$$

$$\overline{TJ} = ? \quad \overline{JH} = ?$$

Unit 1 - Geometry Basics Review Guide

Find the value of x and then find the length of each segment. Draw a diagram to represent the situation.

19. Point F is midpoint of segment \overline{SA} .
 $SF = 7x - 7$ $FA = 3x + 9$
 $\overline{SF} = ?$ $\overline{FA} = ?$ $\overline{SA} = ?$

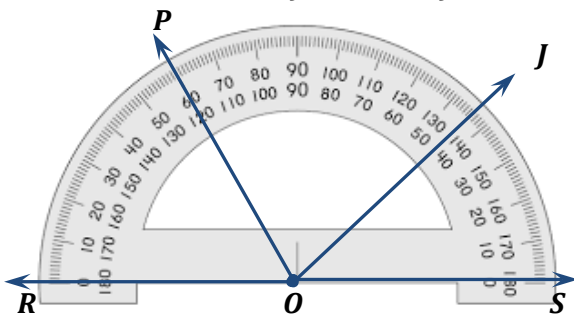
Divide the line segment in the ratio given by putting a dot at the partition.

20.

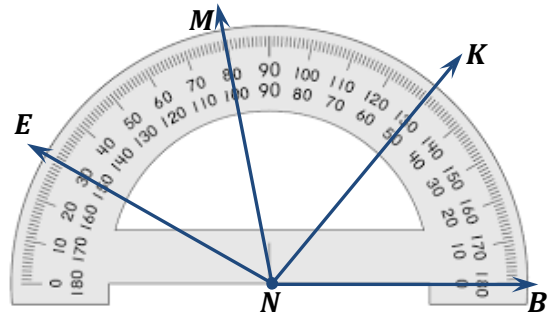


Find the measure of each angle.

21. $m\angle ROP, m\angle ROS, m\angle JOP, m\angle SOJ = ?$



22. $m\angle BNE, m\angle BNK, m\angle KNM, m\angle KNE = ?$

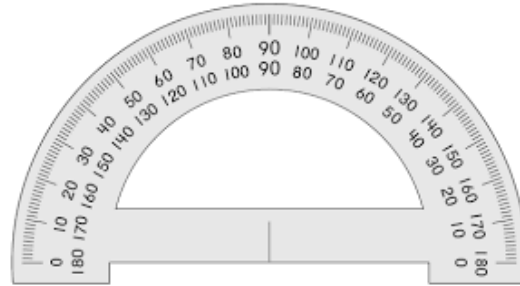
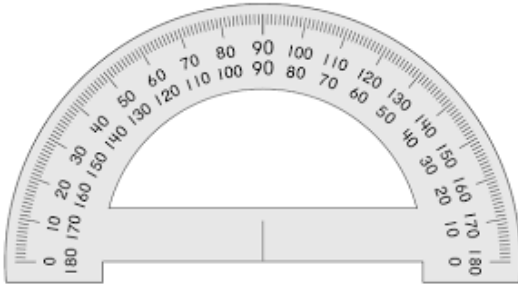


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Use a protractor to draw each angle. Then classify each angle.

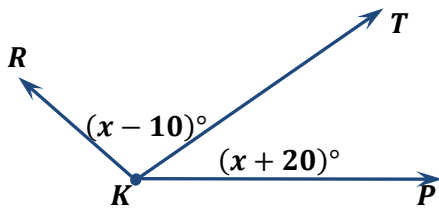
23. $m\angle POS = 153$

24. $m\angle HJL = 52$

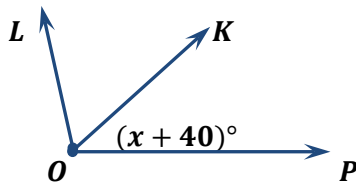


Find the value of x and then the indicated angle measures.

25. If $m\angle PKR = 140$, $m\angle PKT = x + 20$,
 $m\angle TKR = x - 10$, find
 $m\angle PKT$ and $m\angle TKR$?



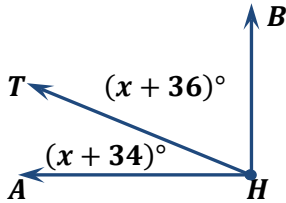
26. If \overline{OK} bisects $\angle POL$ and $m\angle POL = 4x - 20$,
 $m\angle POK = x + 40$, find $m\angle POL$,
 $m\angle POK$ and $m\angle KOL$.



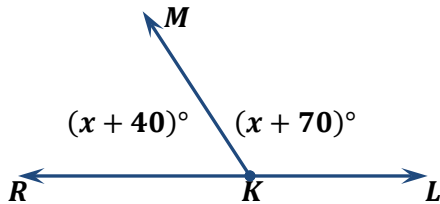
Unit 1 - Geometry Basics Review Guide

Find the measure of each angle.

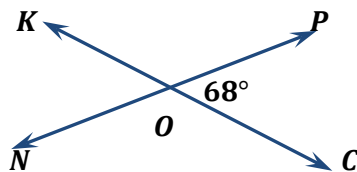
27. $m\angle AHT = x + 34$ $m\angle THB = x + 36$
 $m\angle AHT + m\angle THB = 90$
 $m\angle AHT = ?$ $m\angle FHS = ?$



28. $m\angle RKM = x + 40$ $m\angle LKM = x + 70$
 $m\angle RKM + m\angle LKM = 180$
 $m\angle RKM = ?$ $m\angle LKM = ?$



29. $m\angle COP = 68$
 Find $m\angle NOK$, $m\angle POK$, and $m\angle CON$.



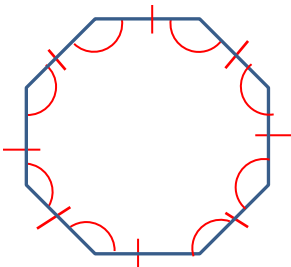
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WORD PROBLEMS

30. Find the measure of an angle and its supplement, if one angle measures 42° more than the other.
31. The measure of the complement of an angle is 24° less than the measure of the angle. Find the measures of the angles.

Classify the polygon by the number of sides. Tell whether the polygon is equilateral, equiangular, or regular.

32.



Draw a figure that fits the description.

33. Regular quadrilateral 34. Regular pentagon 35. Irregular hexagon

Find the coordinate of the midpoint of the segment with the given endpoints on number line.

36. Segment \overline{AK}
 $x_1 = -6$ $x_2 = -2$

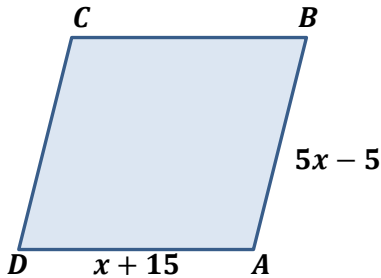


6

Unit 1 - Geometry Basics Review Guide

The figure is a regular polygon. Expressions are given for two side lengths. Find the value of x .

37.



Find the coordinate of the midpoint of the segment with the given endpoints in the coordinate plane.

38. Segment \overline{AB}
 $A(2, 22)$ $B(6, -2)$ 39. Segment \overline{PS}
 $P(-5, 12)$ $S(10, 14)$

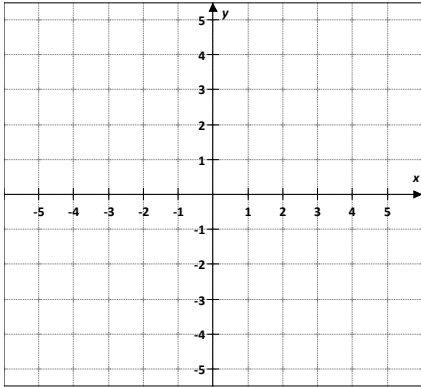
Find the other endpoint of the line segment with the given endpoint and midpoint.

40. Endpoint $(1, 10)$ Midpoint $(3, 3)$ 41. Endpoint $(2, 6)$ Midpoint $(-5, 4)$

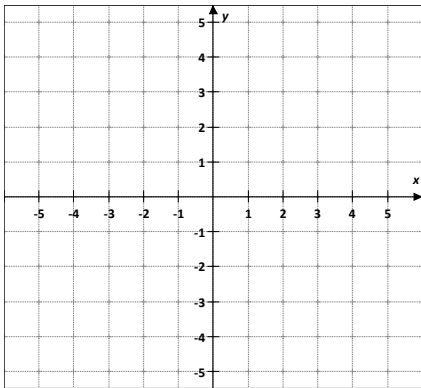
Unit 1 - Geometry Basics Review Guide

Find the distance between each pair of points. Round to the nearest tenth.

42. $R(-4, 1)$ $H(2, -1)$
 $d(R, H) = ?$



43. $A(-4, 3)$ $N(-1, -4)$
 $d(A, N) = ?$



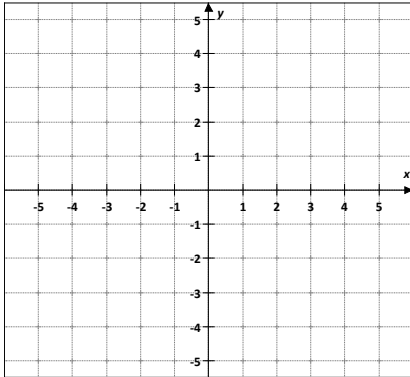
WORD PROBLEM

44. Determine the point M on the x -axis that is equidistant from $A(1, 3)$ and $B(2, -4)$.

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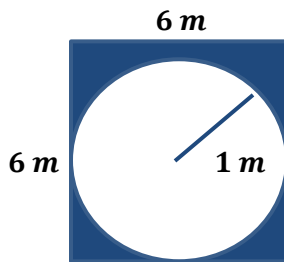
Draw each figure in the coordinate plane. Find the perimeter and area.

45. $R(-2, 4)$, $P(-2, -3)$, $O(1, -3)$ and $D(1, 4)$
 $P_{RPOD} = ?$ $A_{RPOD} = ?$

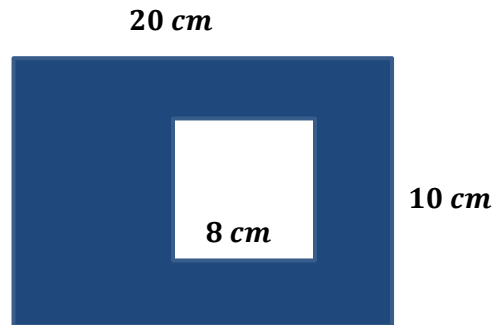


Find the area of the shaded region.

46.

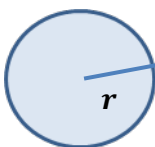


47.

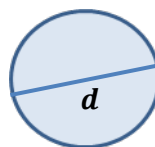


Find the circumference of each circle in terms of π .

48. $r = 7 m$



49. $d = 78 cm$



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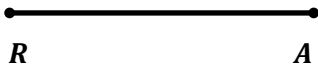
Construct a line segment congruent to the given line segment.

50.



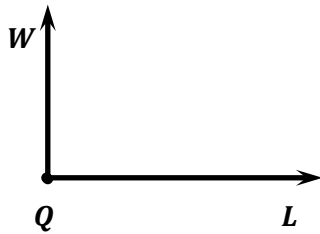
Construct the perpendicular bisector of the given line segment.

51.



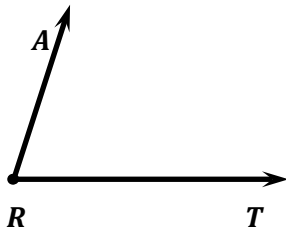
Construct a copy of each angle given.

52.



Construct the bisector of each given angle.

53.

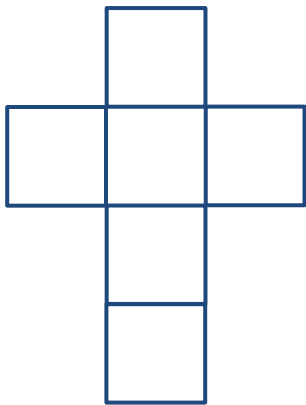


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ANSWERS

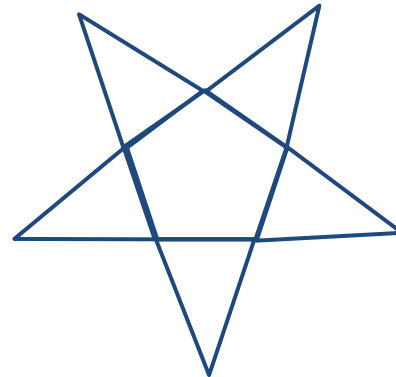
Name a three-dimensional figure that can be formed from each net.

1.



Cube

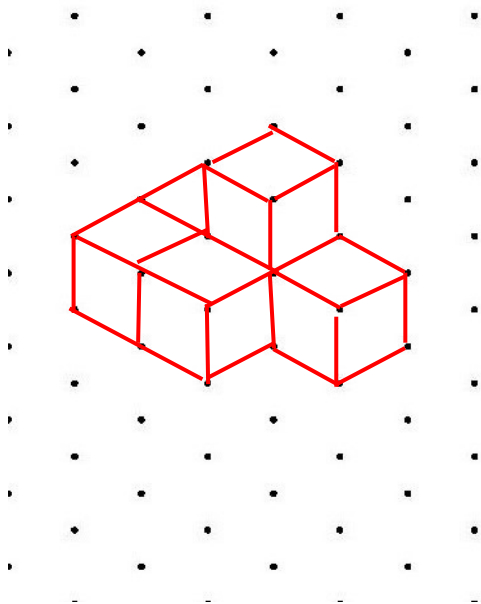
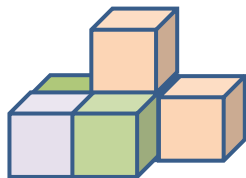
2.



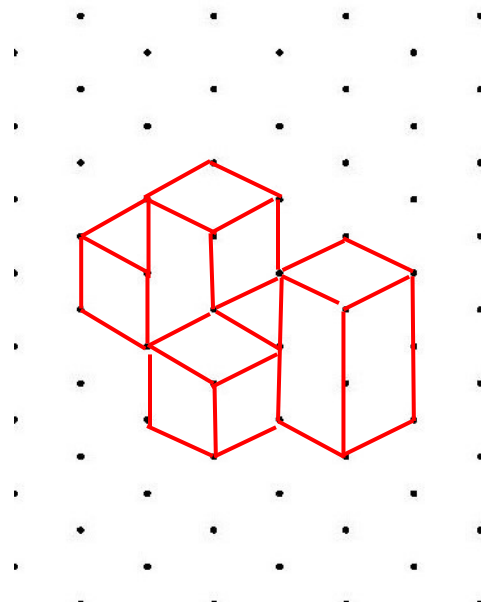
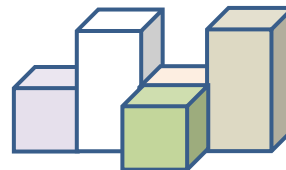
Pentagonal Pyramid

Make an isometric drawing of each on isometric dot paper.

3.

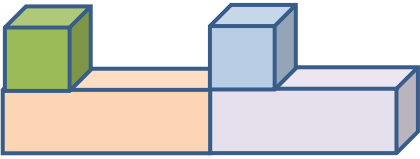



4.

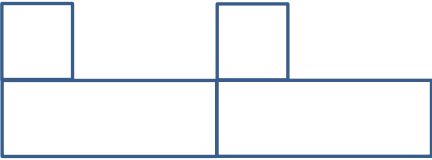



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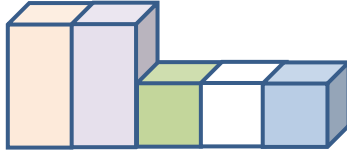
Make an orthographic drawing for each structure.


5. 

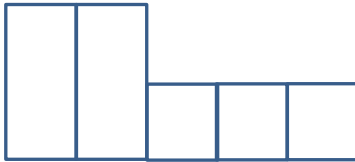
Top view 


Front view 

Right-side view 

6. 

Top view 

Front view 

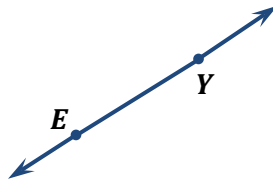
Right-side view 

Draw and label figure for each relationship.

7. Ray \overrightarrow{FK} and ray \overrightarrow{FN}



8. Line \overleftrightarrow{EY}

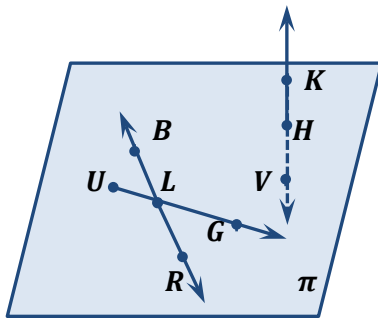


9. Line segment \overline{TR}



Refer to each figure.

10.



Name three line segments.

$\overline{UL}, \overline{BL}, \overline{KH}$

Name the intersection of plane π and line \overleftrightarrow{KV} .

Point H

Name the two opposite rays at point L .

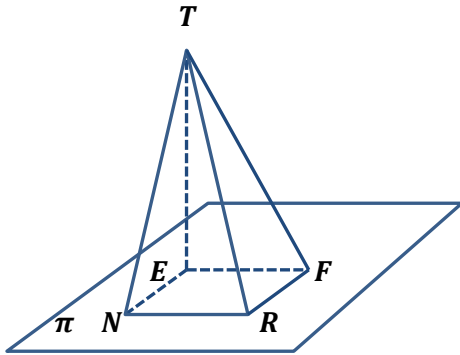
\overrightarrow{LB} and \overrightarrow{LR}

Name the intersection of line \overleftrightarrow{BR} and ray \overrightarrow{UG}

Point L

Unit 1 - Geometry Basics Review Guide

11.



Name three planes.

$\overline{NRF}, \overline{RFT}, \overline{NET}$

Name a point that is coplanar with R and F

Point T

Name the intersection of plane π and plane NET .

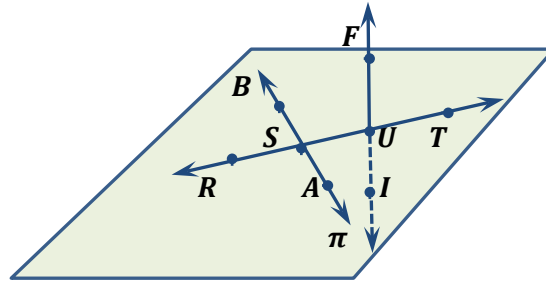
Line \overline{NE}

Name the intersection of plane NRT and plane RFT .

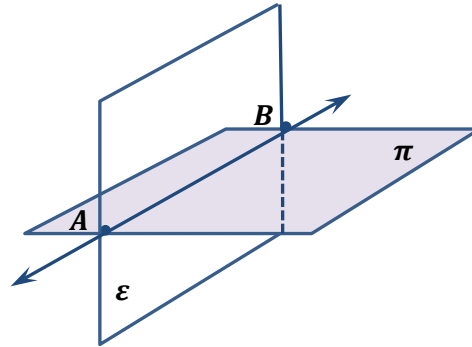
Line \overline{RT}

Draw and label figure for each relationship.

12. Lines \overline{AB} and \overline{RT} intersect in point S in plane π .
 Lines \overline{FI} and \overline{RT} intersect in point U .
 The intersection of plane π and line \overline{FI} is point U .

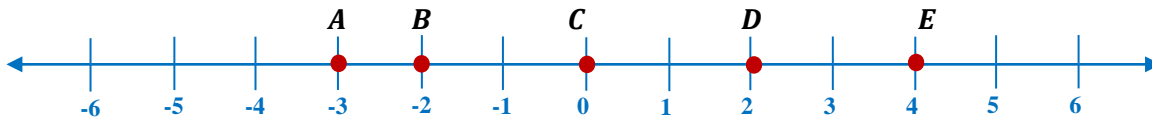


13. The intersection of plane π and plane ε is line \overline{AB} .



Find the length of each segment using number line. Determine whether each of the segments is congruent.

14. $AB = ?$ $BC = ?$ $CD = ?$ $BE = ?$



$$AB = |-3 - (-2)| = |-1| = \mathbf{1}$$

$$BC = |-2 - 0| = |-2| = \mathbf{2}$$

$$CD = |0 - 2| = |-2| = \mathbf{2}$$

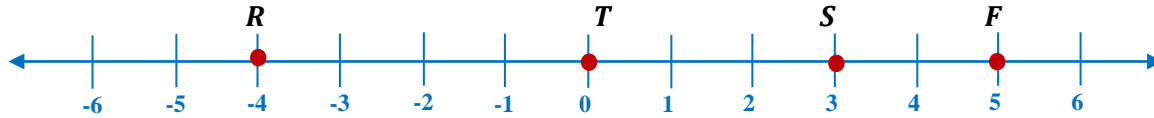
$$BE = |-2 - 4| = |-6| = \mathbf{6}$$

$$BC = CD$$

$$\overline{BC} \cong \overline{CD}$$

Unit 1 - Geometry Basics Review Guide

15. $RT = ?$ $RS = ?$ $SF = ?$ $TF = ?$



$$RT = |-4 - 0| = |-4| = 4$$

$$RS = |-4 - 3| = |-7| = 7$$

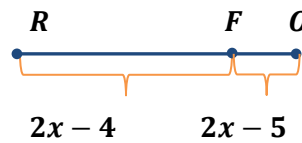
$$SF = |3 - 5| = |-2| = 2$$

$$TF = |0 - 5| = |-5| = 5$$

There are not congruent segments.

Find the value of x and then, find the length of each segment using segment addition postulate.

16. Point F is between points R and O .
The points are collinear.
 $RF = 2x - 4$ $FO = 2x - 5$ $RO = 15$
 $\overline{RF} = ?$ $\overline{FO} = ?$



$$RF + FO = RO$$

$$2x - 4 + 2x - 5 = 15$$

$$4x - 9 = 15$$

$$4x - 9 + 9 = 15 + 9$$

$$4x = 24$$

$$x = 6$$

$$RF = 2x - 4$$

$$RF = 2 * 6 - 4$$

$$RF = 12 - 4$$

$$\overline{RF} = 8$$

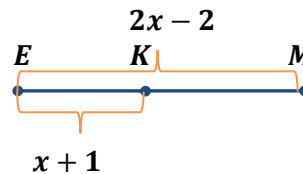
$$FO = 2x - 5$$

$$FO = 2 * 6 - 5$$

$$FO = 12 - 5$$

$$\overline{FO} = 7$$

17. Point K is between points E and M .
The points are collinear.
 $EM = 2x - 2$, $EK = x + 1$, $KM = 11$
 $\overline{EK} = ?$ $\overline{EM} = ?$



$$EK + KM = EM$$

$$x + 1 + 11 = 2x - 2$$

$$x + 12 = 2x - 2$$

$$x + 12 - x = 2x - 2 - x$$

$$12 = x - 2$$

$$12 + 2 = x - 2 + 2$$

$$14 = x$$

$$x = 14$$

$$EM = 2x - 2$$

$$EM = 2 * 14 - 2$$

$$EM = 28 - 2$$

$$\overline{EM} = 26$$

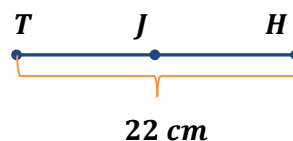
$$EK = x + 1$$

$$EK = 14 + 1$$

$$\overline{EK} = 15$$

Find the length of each segment. Draw a diagram to represent the situation.

18. Point J is midpoint of segment \overline{TH} .
 $\overline{TH} = 22 \text{ cm}$
 $\overline{TJ} = ?$ $\overline{JH} = ?$



$$TH = TJ + JH$$

$$TJ = JH$$

$$TH = 2 * TJ$$

$$TJ = \frac{TH}{2} = \frac{22 \text{ cm}}{2} = 11 \text{ cm}$$

$$\overline{TJ} = 11 \text{ cm}$$

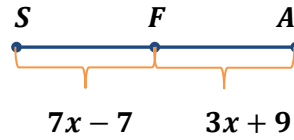
$$JH = TJ$$

$$\overline{JH} = 11 \text{ cm}$$

Unit 1 - Geometry Basics Review Guide

Find the value of x and then find the length of each segment. Draw a diagram to represent the situation.

19. Point F is midpoint of segment \overline{SA} .
 $SF = 7x - 7$ $FA = 3x + 9$
 $\overline{SF} = ?$ $\overline{FA} = ?$ $\overline{SA} = ?$



$$SF = FA$$

$$7x - 7 = 3x + 9$$

$$7x - 7 + 7 = 3x + 9 + 7$$

$$7x = 3x + 16$$

$$7x - 3x = 3x - 3x + 16$$

$$4x = 16$$

$$x = 4$$

$$SF = 7x - 7$$

$$SF = 7 * 4 - 7 = 28 - 7$$

$$SF = 21$$

$$\overline{SF} = 21$$

$$FA = 3x + 9$$

$$FA = 3 * 4 + 9 = 12 + 9$$

$$FA = 21$$

$$\overline{FA} = 21$$

$$SA = SF + FA$$

$$SA = 21 + 21$$

$$SA = 42$$

$$\overline{SA} = 42$$

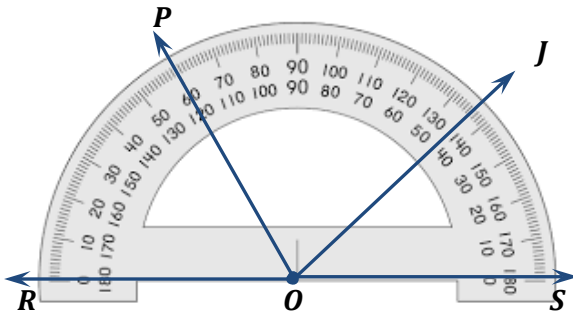
Divide the line segment in the ratio given by putting a dot at the partition.

- 20.



Find the measure of each angle.

21. $m\angle ROP, m\angle ROS, m\angle JOP, m\angle SOJ = ?$



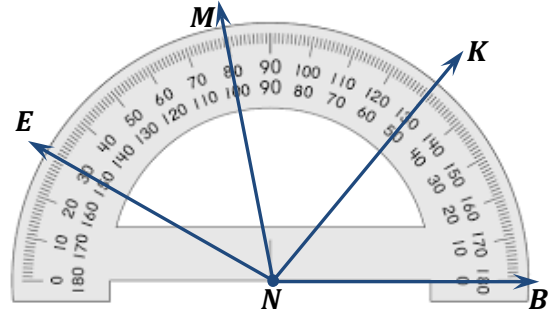
$$m\angle ROP = 45$$

$$m\angle ROS = 180$$

$$m\angle JOP = |120 - 45| = 75$$

$$m\angle SOJ = 45$$

22. $m\angle BNE, m\angle BNK, m\angle KNM, m\angle KNE = ?$



$$m\angle BNE = 150$$

$$m\angle BNK = 50$$

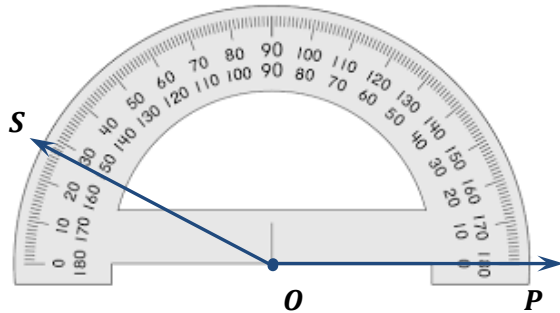
$$m\angle KNM = |100 - 50| = 50$$

$$m\angle KNE = |150 - 50| = 100$$

Unit 1 - Geometry Basics Review Guide

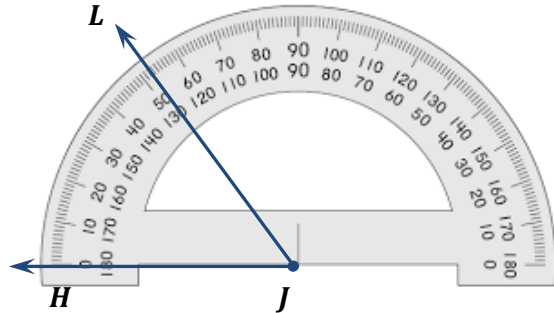
Use a protractor to draw each angle. Then classify each angle.

23. $m\angle POS = 153$



Obtuse angle

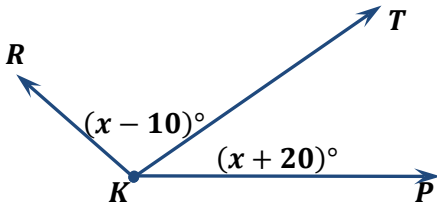
24. $m\angle HJL = 52$



Acute angle

Find the value of x and then the indicated angle measures.

25. If $m\angle PKR = 140$, $m\angle PKT = x + 20$, $m\angle TKR = x - 10$, find $m\angle PKT$ and $m\angle TKR$?



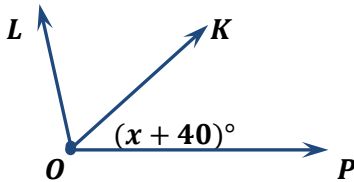
$$\begin{aligned} m\angle PKR &= 140, \\ m\angle PKT &= x + 20, \\ m\angle TKR &= x - 10 \\ m\angle PKT &=? \quad m\angle TKR &=? \end{aligned}$$

$$\begin{aligned} m\angle PKR &= m\angle PKT + m\angle TKR \\ 140 &= x + 20 + x - 10 \\ 140 &= 2x + 10 \\ 140 - 10 &= 2x + 10 - 10 \\ 130 &= 2x \end{aligned}$$

$x = 65$

$$\begin{aligned} m\angle PKT &= x + 20 & m\angle TKR &= x - 10 \\ m\angle PKT &= 65 + 20 & m\angle TKR &= 65 - 10 \\ m\angle PKT &= 85 & m\angle TKR &= 55 \end{aligned}$$

26. If \overrightarrow{OK} bisects $\angle POL$ and $m\angle POL = 4x - 20$, $m\angle POK = x + 40$, find $m\angle POL$, $m\angle POK$ and $m\angle KOL$.



$$\begin{aligned} m\angle POL &= 4x - 20 & m\angle POK &= x + 40 \\ m\angle POL &=? & m\angle POK &=? & m\angle KOL &=? \end{aligned}$$

$$\begin{aligned} m\angle POL &= m\angle POK + m\angle KOL \\ m\angle POK &= m\angle KOL \\ m\angle POL &= 2 * m\angle POK \\ 4x - 20 &= 2 * (x + 40) \\ 4x - 20 &= 2x + 80 \\ 4x - 20 + 20 &= 2x + 80 + 20 \\ 4x &= 2x + 100 \\ 4x - 2x &= 2x - 2x + 100 \\ 2x &= 100 \end{aligned}$$

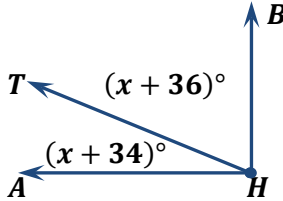
$x = 50$

$$\begin{aligned} m\angle POK &= x + 40 & m\angle POL &= 4x - 20 \\ m\angle POK &= 50 + 40 & m\angle POL &= 4 * 50 - 20 \\ m\angle POK &= 90 & m\angle POL &= 200 - 20 \\ m\angle KOL &= m\angle POK & m\angle POL &= 180 \\ m\angle KOL &= 90 \end{aligned}$$

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Find the measure of each angle.

27. $m\angle AHT = x + 34$ $m\angle THB = x + 36$
 $m\angle AHT + m\angle THB = 90$
 $m\angle AHT = ?$ $m\angle THB = ?$



$$m\angle AHT + m\angle THB = 90$$

$$x + 34 + x + 36 = 90$$

$$2x + 70 = 90$$

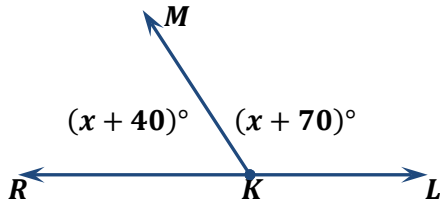
$$2x + 70 - 70 = 90 - 70$$

$$2x = 20$$

$$x = 10$$

$m\angle AHT = x + 34$	$m\angle THB = x + 36$
$m\angle AHT = 10 + 34$	$m\angle THB = 10 + 36$
$m\angle AHT = 44$	$m\angle THB = 46$

28. $m\angle RKM = x + 40$ $m\angle LKM = x + 70$
 $m\angle RKM + m\angle LKM = 180$
 $m\angle RKM = ?$ $m\angle LKM = ?$



$$m\angle RKM + m\angle LKM = 180$$

$$x + 40 + x + 70 = 180$$

$$2x + 110 = 180$$

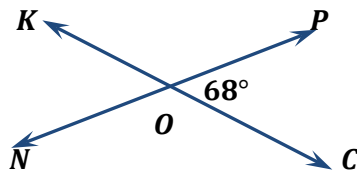
$$2x + 110 - 110 = 180 - 110$$

$$2x = 70$$

$$x = 35$$

$m\angle RKM = x + 40$	$m\angle LKM = x + 70$
$m\angle RKM = 35 + 40$	$m\angle LKM = 35 + 70$
$m\angle RKM = 75$	$m\angle LKM = 105$

29. $m\angle COP = 68$
 Find $m\angle NOK$, $m\angle POK$, and $m\angle CON$.



$$m\angle COP = 68$$

$\angle COP$ and $\angle NOK$ are vertical angles

$$m\angle NOK = m\angle COP$$

$$m\angle NOK = 68$$

$$m\angle COP + m\angle POK = 180$$

$$m\angle POK = 180 - m\angle COP$$

$$m\angle POK = 180 - 68$$

$$m\angle POK = 112$$

$\angle POK$ and $\angle CON$ are vertical angles

$$m\angle CON = m\angle POK$$

$$m\angle CON = 112$$

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WORD PROBLEMS

30. Find the measure of an angle and its supplement, if one angle measures 42° more than the other.

$$m\angle 1 = x \quad m\angle 2 = x + 42$$

$$m\angle 1 = ? \quad m\angle 2 = ?$$

$$m\angle 1 + m\angle 2 = 180$$

$$x + x + 42 = 180$$

$$2x + 42 = 180$$

$$2x + 42 - 42 = 180 - 42$$

$$2x = 138$$

$$x = 69$$

$$m\angle 1 = 69 \quad m\angle 2 = 69 + 42$$

$$m\angle 2 = 111$$

31. The measure of the complement of an angle is 24° less than the measure of the angle. Find the measures of the angles.

$$m\angle 1 = x \quad m\angle 2 = x - 24$$

$$m\angle 1 = ? \quad m\angle 2 = ?$$

$$m\angle 1 + m\angle 2 = 90$$

$$x + x - 24 = 90$$

$$2x - 24 = 90$$

$$2x - 24 + 24 = 90 + 24$$

$$2x = 114$$

$$x = 57$$

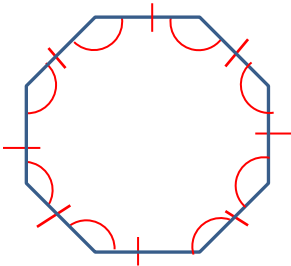
$$m\angle 1 = 57 \quad m\angle 2 = x - 57$$

$$m\angle 2 = 90 - 57$$

$$m\angle 2 = 33$$

Classify the polygon by the number of sides. Tell whether the polygon is equilateral, equiangular, or regular.

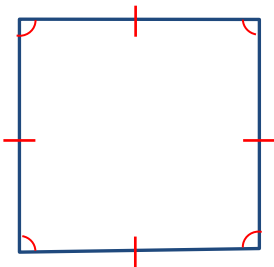
32.



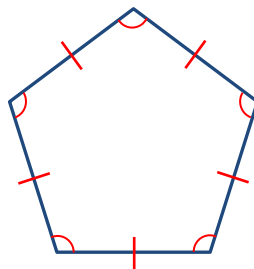
The polygon has 8 sides, so it is octagon.
It is equilateral and equiangular.
Regular octagon.

Draw a figure that fits the description.

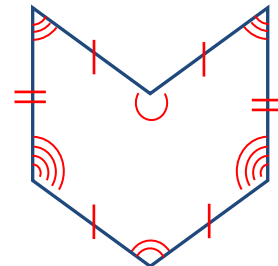
33. Regular quadrilateral



34. Regular pentagon



35. Irregular hexagon

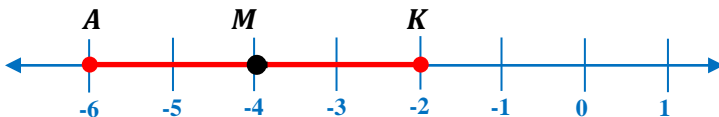


Find the coordinate of the midpoint of the segment with the given endpoints on number line.

36. Segment \overline{AK}

$$x_1 = -6$$

$$x_2 = -2$$



$$M = \frac{x_1 + x_2}{2}$$

$$M = \frac{-6 + (-2)}{2}$$

$$M = \frac{-8}{2}$$

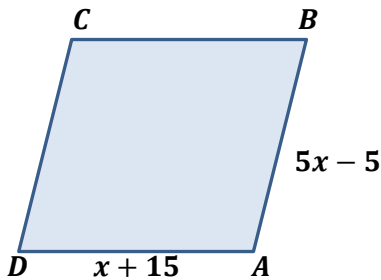
$$M = -4$$

6

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The figure is a regular polygon. Expressions are given for two side lengths. Find the value of x .

37.



$$\begin{aligned} \overline{AB} &= 5x - 5 \\ \overline{DA} &= x + 15 \\ \overline{AB} &= \overline{DA} \\ 5x - 5 &= x + 15 \\ 5x - 5 + 5 &= x + 15 + 5 \\ 5x &= x + 20 \\ 5x - x &= x - x + 20 \\ 4x &= 20 \\ \mathbf{x} &= \mathbf{5} \end{aligned}$$

$$\begin{aligned} \overline{AB} &= 5x - 5 & \overline{DA} &= x + 15 \\ \overline{AB} &= 5 * 5 - 5 & \overline{DA} &= 5 + 15 \\ \overline{AB} &= 25 - 5 & \mathbf{\overline{DA}} &= \mathbf{20} \\ \mathbf{\overline{AB}} &= \mathbf{20} & & \end{aligned}$$

Find the coordinate of the midpoint of the segment with the given endpoints in the coordinate plane.

38. Segment \overline{AB}

$A(2, 22)$

$B(6, -2)$

Segment \overline{AB}

$A(2, 22)$

$B(6, -2)$

$(x_1, y_1) = (2, 22)$

$(x_2, y_2) = (6, -2)$

$$\begin{aligned} M &= \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \\ M &= \left(\frac{2 + 6}{2}, \frac{22 + (-2)}{2} \right) \\ M &= \left(\frac{8}{2}, \frac{20}{2} \right) \\ \mathbf{M} &= \mathbf{(4, 10)} \end{aligned}$$

39. Segment \overline{PS}

$P(-5, 12)$

$S(10, 14)$

Segment \overline{PS}

$P(-5, 12)$

$S(10, 14)$

$(x_1, y_1) = (-5, 12)$

$(x_2, y_2) = (10, 14)$

$$\begin{aligned} M &= \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \\ M &= \left(\frac{-5 + 10}{2}, \frac{12 + 14}{2} \right) \\ M &= \left(\frac{5}{2}, \frac{26}{2} \right) \\ \mathbf{M} &= \mathbf{(2.5, 13)} \end{aligned}$$

Find the other endpoint of the line segment with the given endpoint and midpoint.

40. Endpoint (1, 10) Midpoint (3, 3)

Endpoint (1, 10)

Midpoint (3, 3)

$(x_1, y_1) = (1, 10)$

$(x, y) = (3, 3)$

$$\begin{aligned} M_x &= \frac{x_1 + x_2}{2} \\ 3 &= \frac{1 + x_2}{2} \\ 6 &= 1 + x_2 \\ 6 - 1 &= 1 - 1 + x_2 \\ x_2 &= 5 \end{aligned}$$

$$\begin{aligned} M_y &= \frac{y_1 + y_2}{2} \\ 3 &= \frac{10 + y_2}{2} \\ 6 &= 10 + y_2 \\ 6 - 10 &= 10 - 10 + y_2 \\ y_2 &= -4 \end{aligned}$$

$\mathbf{(x_2, y_2) = (5, -4)}$

41. Endpoint (2, 6) Midpoint (-5, 4)

Endpoint (2, 6)

Midpoint (-5, 4)

$(x_1, y_1) = (2, 6)$

$(x, y) = (-5, 4)$

$$\begin{aligned} M_x &= \frac{x_1 + x_2}{2} \\ -5 &= \frac{2 + x_2}{2} \\ -10 &= 2 + x_2 \\ -10 - 2 &= 2 - 2 + x_2 \\ x_2 &= -12 \end{aligned}$$

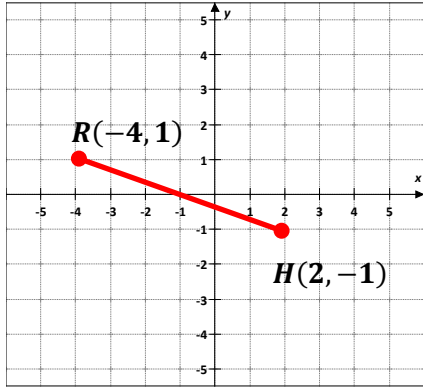
$$\begin{aligned} M_y &= \frac{y_1 + y_2}{2} \\ 4 &= \frac{6 + y_2}{2} \\ 8 &= 6 + y_2 \\ 8 - 6 &= 6 - 6 + y_2 \\ y_2 &= 2 \end{aligned}$$

$\mathbf{(x_2, y_2) = (-12, 2)}$

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Find the distance between each pair of points. Round to the nearest tenth.

42. $R(-4, 1)$ $H(2, -1)$
 $d(R, H) = ?$



$R(-4, 1)$ $H(2, -1)$
 $(x_1, y_1) = (-4, 1)$ $(x_2, y_2) = (2, -1)$
 $d(R, H) = ?$

$$d(R, H) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$d(R, H) = \sqrt{(2 - (-4))^2 + (-1 - 1)^2}$$

$$d(R, H) = \sqrt{(6)^2 + (-2)^2}$$

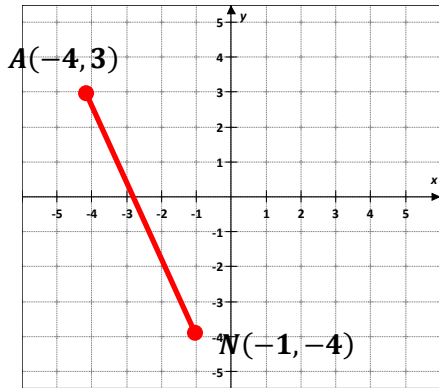
$$d(R, H) = \sqrt{36 + 4}$$

$$d(R, H) = \sqrt{40}$$

$$d(R, H) = 2\sqrt{10}$$

$$d(R, H) \approx 6.3$$

43. $A(-4, 3)$ $N(-1, -4)$
 $d(A, N) = ?$



$A(-4, 3)$ $N(-1, -4)$
 $(x_1, y_1) = (-4, 3)$ $(x_2, y_2) = (-1, -4)$
 $d(A, N) = ?$

$$d(A, N) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$d(A, N) = \sqrt{(-1 - (-4))^2 + (-4 - 3)^2}$$

$$d(A, N) = \sqrt{(-1 + 4)^2 + (-7)^2}$$

$$d(A, N) = \sqrt{(3)^2 + (-7)^2}$$

$$d(A, N) = \sqrt{9 + 49}$$

$$d(A, N) = \sqrt{58}$$

$$d(A, N) \approx 7.6$$

WORD PROBLEM

44. Determine the point M on the x -axis that is equidistant from $A(1, 3)$ and $B(2, -4)$.

$M(x, 0)$
 $A(1, 3), M(x, 0)$ and $B(2, -4)$

$$d(A, M) = d(B, M)$$

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\sqrt{(x - 1)^2 + (0 - 3)^2} = \sqrt{(x - 2)^2 + (0 - (-4))^2}$$

$$(x - 1)^2 + (0 - 3)^2 = (x - 2)^2 + (4)^2$$

$$x^2 - 2x + 1 + 9 = x^2 - 4x + 4 + 16$$

$$x^2 - 2x + 1 + 9 - x^2 = x^2 - 4x + 4 + 16 - x^2$$

$$-2x + 10 = -4x + 20$$

$$-2x + 10 - 10 = -4x + 20 - 10$$

$$-2x = -4x + 10$$

$$-2x + 4x = -4x + 10 + 4x$$

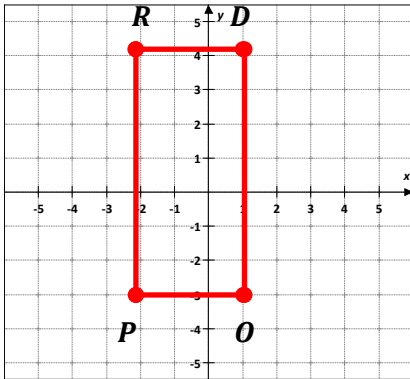
$$2x = 10$$

$$x = 5 \quad M(5, 0)$$

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Draw each figure in the coordinate plane. Find the perimeter and area.

45. $R(-2, 4)$, $P(-2, -3)$, $O(1, -3)$ and $D(1, 4)$
 $P_{RPOD} = ?$ $A_{RPOD} = ?$



$$P_{RPOD} = RD + RP + PO + DO$$

$$P_{RPOD} = 3 \text{ units} + 7 \text{ units} + 3 \text{ units} + 7 \text{ units}$$

$$P_{RPOD} = 20 \text{ units}$$

- $R(-2, 4)$, $P(-2, -3)$, $O(1, -3)$ and $D(1, 4)$
 $P_{RPOD} = ?$ $A_{RPOD} = ?$

$R(-2, 4)$, $D(1, 4)$	$R(-2, 4)$, $P(-2, -3)$
$RD = -2 - 1 $	$RP = -3 - 4 $
$RD = -3 $	$RP = -7 $
$RD = 3 \text{ units}$	$RP = 7 \text{ units}$

$P(-2, -3)$, $O(1, -3)$	$D(1, 4)$, $O(1, -3)$
$PO = 1 - (-2) $	$DO = 4 - (-3) $
$PO = 3 $	$DO = 7 $
$PO = 3 \text{ units}$	$DO = 7 \text{ units}$

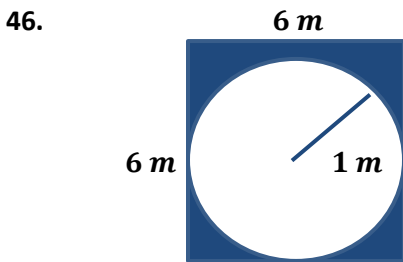
RECTANGLE

$$A_{RPOD} = RD * RP$$

$$A_{RPOD} = 3 \text{ units} * 7 \text{ units}$$

$$A_{RPOD} = 21 \text{ units}^2$$

Find the area of the shaded region.



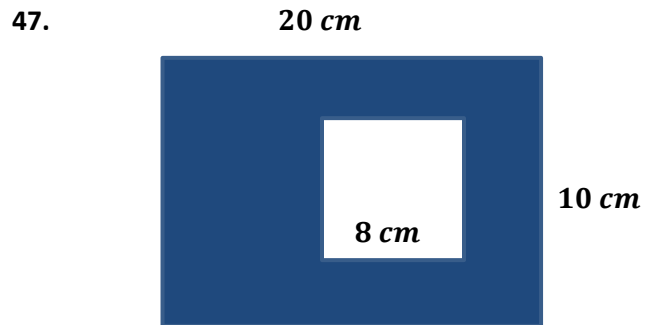
$$A = A_{\text{square}} - A_{\text{circle}}$$

$$A = 6 \text{ m} * 6 \text{ m} - (1 \text{ m})^2 * 3.14$$

$$A = 36 \text{ m}^2 - 1 \text{ m}^2 * 3.14$$

$$A = 36 \text{ m}^2 - 3.14 \text{ m}^2$$

$$A \approx 32.86 \text{ m}^2$$



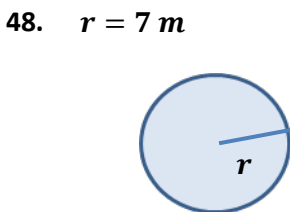
$$A = A_{\text{rectangle blue}} - A_{\text{square white}}$$

$$A = 20 \text{ cm} * 10 \text{ cm} - 8 \text{ cm} * 8 \text{ cm}$$

$$A = 200 \text{ cm}^2 - 64 \text{ cm}^2$$

$$A = 136 \text{ cm}^2$$

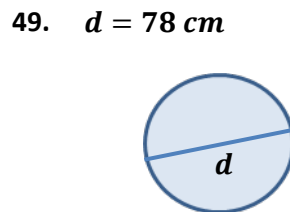
Find the circumference of each circle in terms of π .



$$C = 2\pi r$$

$$C = 2\pi 7 \text{ m}$$

$$C = 14\pi \text{ m}$$



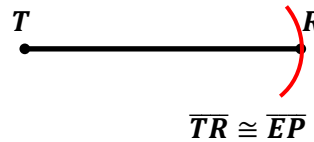
$$C = \pi d$$

$$C = 78\pi \text{ cm}$$

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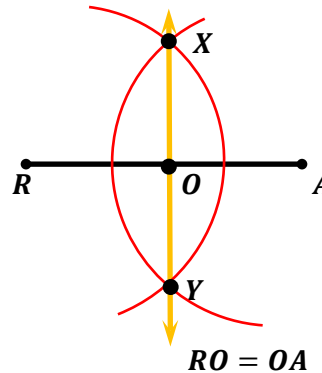
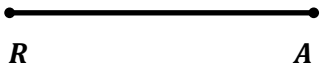
Construct a line segment congruent to the given line segment.

50.



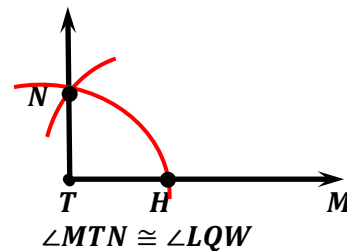
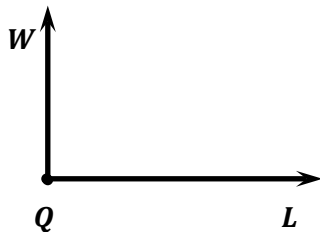
Construct the perpendicular bisector of the given line segment.

51.



Construct a copy of each angle given.

52.



Construct the bisector of each given angle.

53.

