NAME _____

Lesson 1 Lines and Line Segments

A **line** has no endpoints.

To name a line, name any two points on the line.

line *JW* or line *WJ*

A **line segment** has two **endpoints.**

A line segment is part of a line. The line segment consists of the endpoints and all points on the line between the endpoints. To name a line segment, name the endpoints.

line segment *GS* or line segment *SG*

Circle the correct name for each figure.

1. 	line *AB*	line segment *BA*	line *CA*
2. 	line segment *FG*	line *GF*	line *FG*
3. 	line *CE*	line segment *CE*	line *CE*
4. 	line segment *MN*	line *MN*	line *MN*
5. 	line *RS*	line segment *RS*	line *SR*
6. 	line segment *KI*	line *KI*	line *IK*
7. 	line *XZ*	line segment *ZX*	line *ZX*
8. 	line segment *PE*	line *EP*	line *EE*
9. 	line *V*	line segment *VT*	line *VT*

Draw and label the following.

10. line segment *HQ*

CHAPTER 14

NAME _____

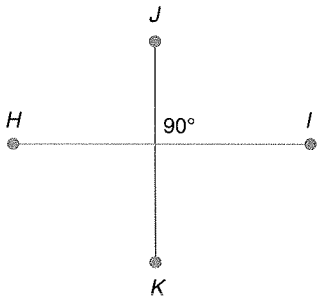
Lesson 2 Parallel and Perpendicular

Parallel lines or line segments never intersect and are always the same distance apart. Parallel is indicated by the symbol ||.

Use symbols to identify each figure.

line AB || line CD

Perpendicular lines or line segments intersect each other and form 90° angles. Perpendicular is indicated by the symbol ⊥.

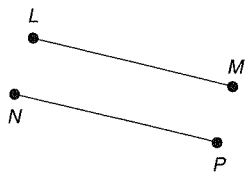


line segment HI ⊥ line segment JK

Use symbols to identify each figure.

a

1.



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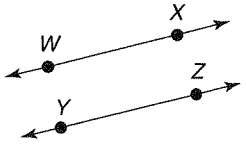
2.



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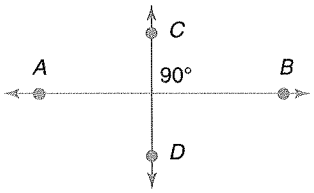
3.



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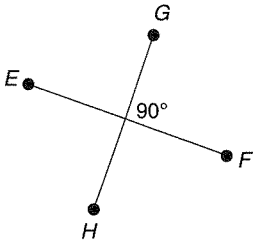
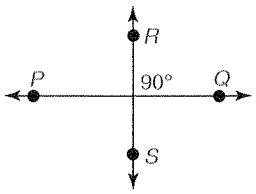
4.



_____

b



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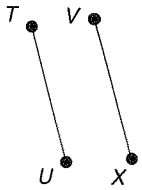

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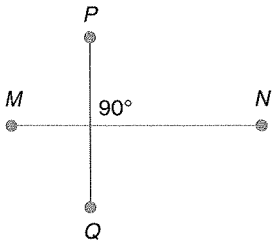

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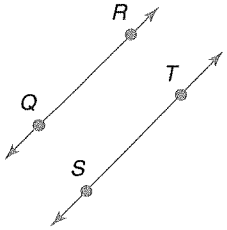

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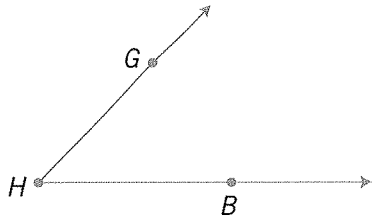
NAME _____

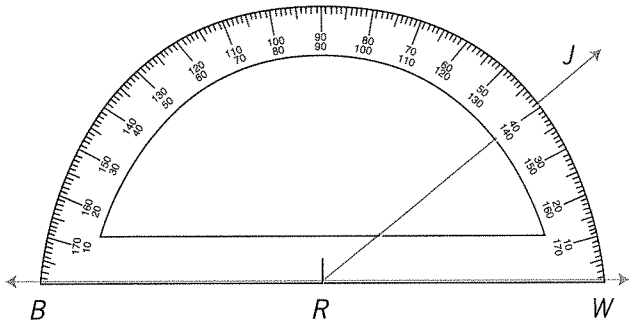
Lesson 3 Angles

An **angle** has two sides and a **vertex.**

Angle *GHB* (denoted ∠*GHB*) has a vertex of *H*. When naming an angle, use the vertex as the middle letter.



To use a protractor to measure an angle:



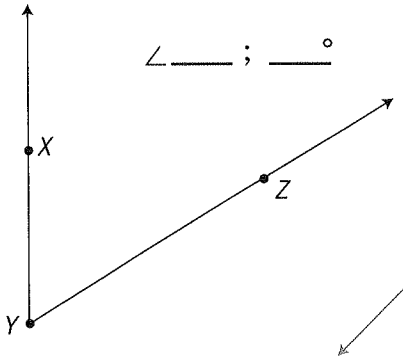
Place the centre of the protractor at the vertex of the angle. Align one side of the angle with the base of the protractor. Use the scale starting at 0 and read the measure of the angle.

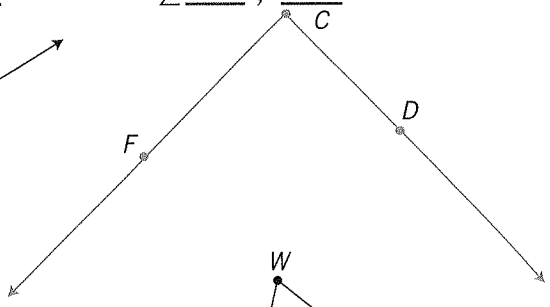
The measurement of ∠*JRW* is 40°.
The measurement of ∠*JRB* is 140°.

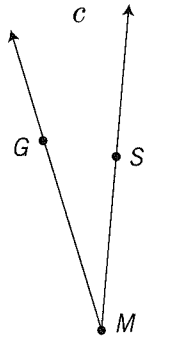
Name each angle. Then use a protractor to measure each angle.

a *b* *c*

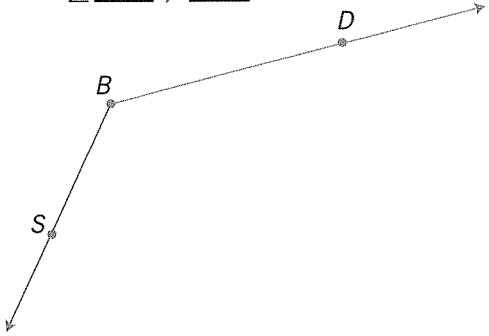
1. ∠____ ; ____° ∠____ ; ____° ∠____ ; ____°

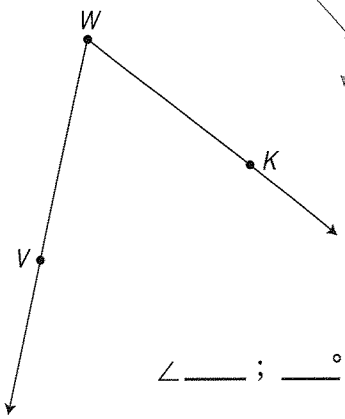


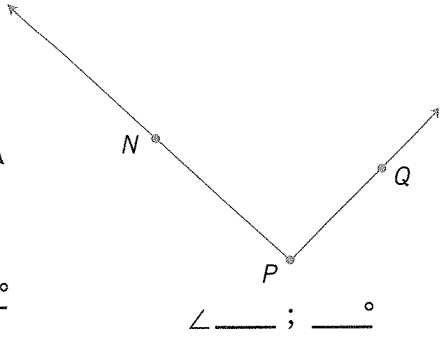




2. ∠____ ; ____° ∠____ ; ____° ∠____ ; ____°







CHAPTER 14

NAME _____

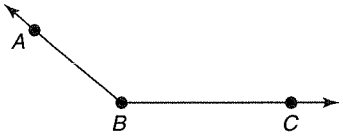
Lesson 4 Acute, Obtuse, and Right Angles

An **acute angle** measures less than 90°.

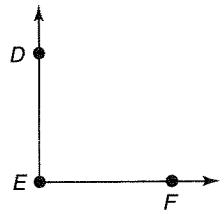
An **obtuse angle** measures more than 90°.

A **right angle** measures 90°.

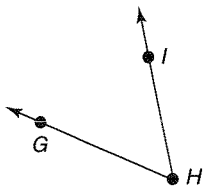
Name each angle. Give its measure and identify it as *acute, obtuse,* or *right.*



$\angle ABC$ or $\angle CBA$; 140°; obtuse



$\angle DEF$ or $\angle FED$; 90°; right

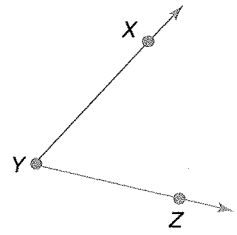


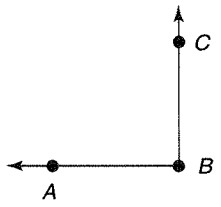
$\angle GHI$ or $\angle IHG$; 55°; acute

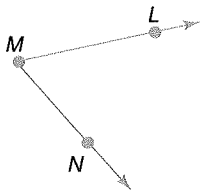
Name each angle. Give its measure and identify it as *acute, obtuse,* or *right.*

a *b* *c*

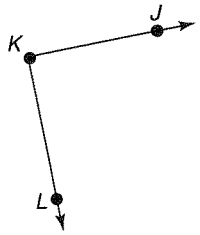
1.

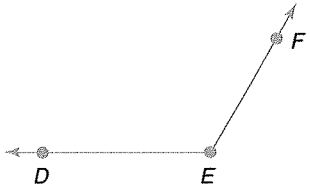


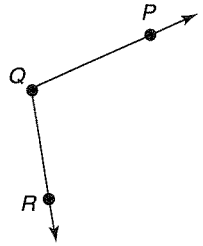




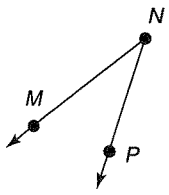
2.

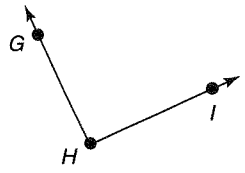


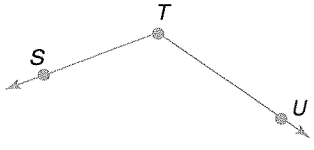




3.







NAME _____

Lesson 5 Quadrilaterals

Quadrilaterals are figures that have four sides and four vertices. The following are more specific types of quadrilaterals.

A **parallelogram** has two pairs of opposite sides that are parallel.

A **rectangle** is a parallelogram with all right angles.

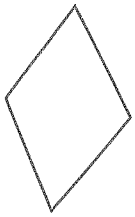
A **square** is a rectangle with all sides the same length.

A **trapezoid** has one pair of opposite sides that are parallel.

A **rhombus** is a parallelogram with all sides the same length.

Circle the name that best describes each quadrilateral.

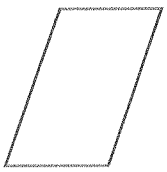
1.  square trapezoid parallelogram

2.  rectangle square rhombus

3.  rhombus trapezoid parallelogram

4.  square parallelogram rectangle

5.  square rhombus rectangle

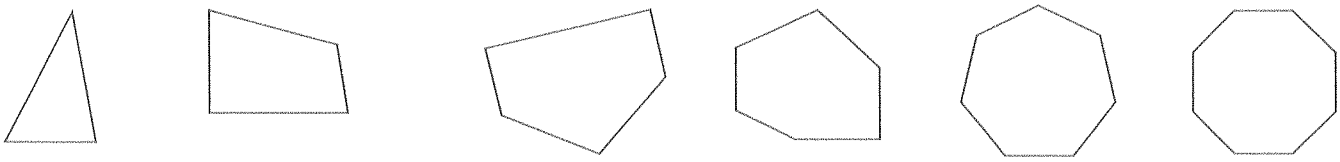
6.  parallelogram trapezoid rectangle

CHAPTER 14

NAME _____

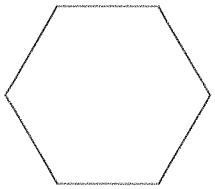
Lesson 6 Polygons

A **polygon** is a closed shape that is formed by three or more sides.
Polygons are named for the number of sides they have.



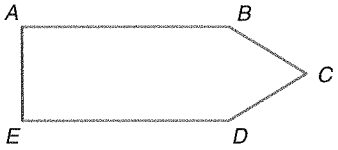
Triangle	Quadrilateral	Pentagon	Hexagon	Heptagon	Octagon
3 sides	___ sides	___ sides	___ sides	___ sides	___ sides

When all of the sides of a polygon are the same length, the figure is called a **regular polygon**.



The figure to the right is a regular hexagon.

To name a polygon, use the letters of the vertices and list them in alphabetical order.
The figure below is figure *ABCDE,* or pentagon *ABCDE.*



On the line after each name, write the letter(s) of the figure(s) it describes. Some names will have more than one letter. Some figures have more than one name.

1. pentagon _____

2. hexagon _____

3. octagon _____

4. triangle _____

5. heptagon _____

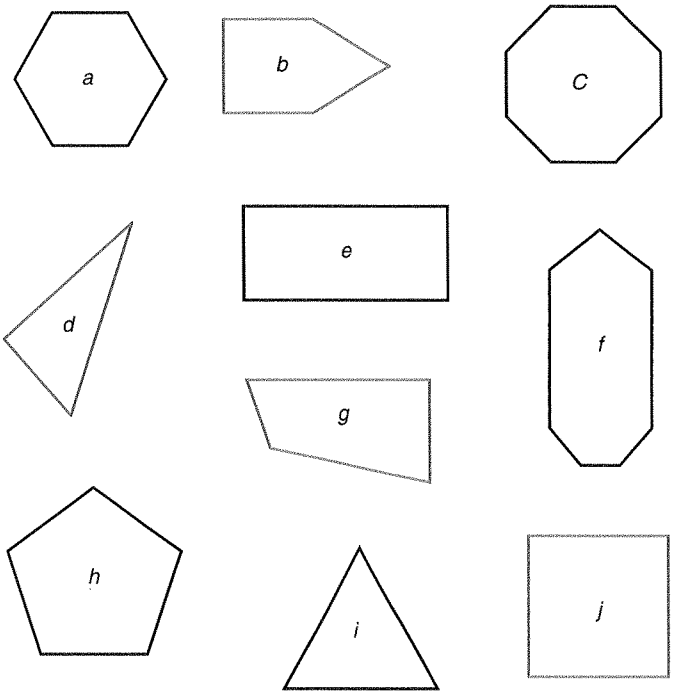
6. quadrilateral _____

7. regular triangle _____

8. regular hexagon _____

9. regular pentagon _____

10. regular quadrilateral _____

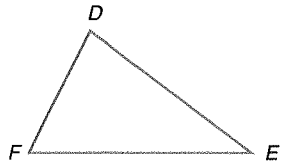


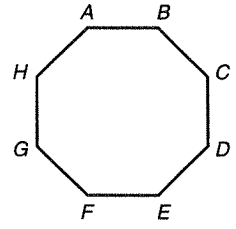
Lesson 6 Polygons

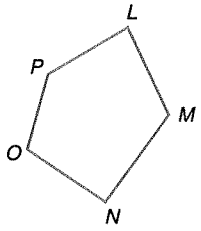
Name each figure shown.

a *b* *c*

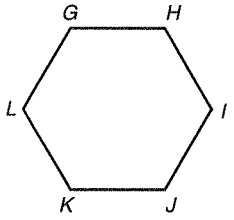
11.

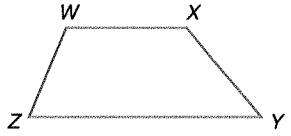


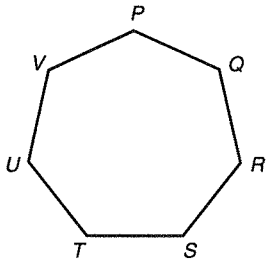




12.

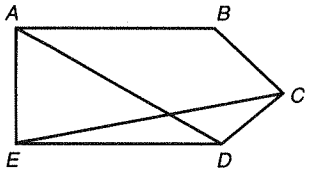






A line segment that connects two vertices, but is not a side, is called a **diagonal.**

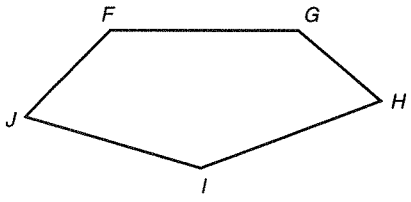
Two diagonals are drawn on pentagon *ABCDE*, diagonal *AD* and diagonal *EC*.

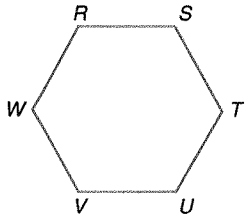


Draw and name all of the diagonals of each figure.

a *b*

13.





Use problem **13** to answer the following questions.

14. Are all of the diagonals of figure *FGHIJ* the same length? _____

15. How many diagonals does figure *FGHIJ* have? _____

16. Are all of the diagonals of figure *RSTUVW* the same length? _____

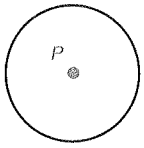
17. How many diagonals does figure *RSTUVW* have? _____

NAME _____

Lesson 7 Circles

To name a **circle,** use the letter at the centre of the circle.

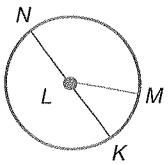
Circle P



A line segment from the centre of the circle to any point on the circle is a **radius.** A line segment that has endpoints on the circle and passes through the centre of the circle is a **diameter.**

In circle L, LM is a radius and KN is a diameter.

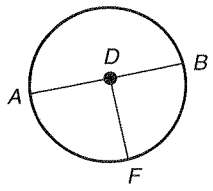
Note that KL and LN are also **radii** (plural of radius).

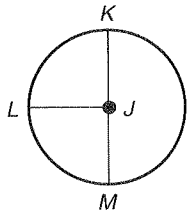


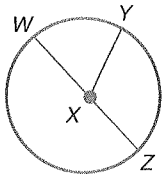
Name each circle. Identify a radius and diameter of each circle.

a *b* *c*

1.







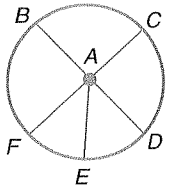
name: _____ name: _____ name: _____

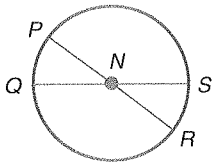
radius: _____ radius: _____ radius: _____

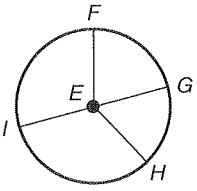
_____ _____ _____

diameter: _____ diameter: _____ diameter: _____

2.







name: _____ name: _____ name: _____

radius: _____ radius: _____ radius: _____

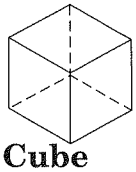
_____ _____ _____

diameter: _____ diameter: _____ diameter: _____

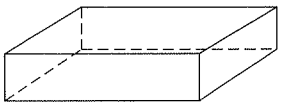
3. Draw circle S with radius ST and diameter QR.

NAME _____

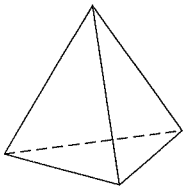
Lesson 8 Three-Dimensional Objects



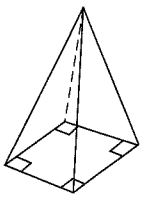
Cube



Rectangular Prism



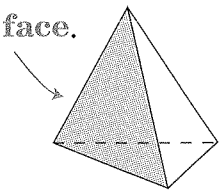
Triangular Pyramid



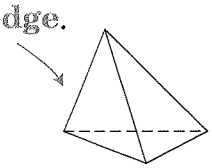
Square Pyramid

Each of these objects has faces, edges, and vertices.
Each of the faces of these objects is a polygon.

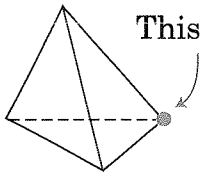
This is a **face**.



This is an **edge**.



This is a **vertex**.



edge	face	rectangle	square	triangle	vertex
edges	faces	rectangles	squares	triangles	vertices

Choose from the list above to complete each sentence. You might use some words more than once. You might not use all the words.

1. All of the faces of a cube are _____.

2. All of the faces of a rectangular prism are _____.

3. The bottom face of a triangular pyramid is a _____.

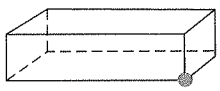
4. The coloured part of object **A** below is a(n)_____.

5. The coloured part of object **B** below is a(n)_____.

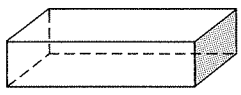
6. The coloured part of object **C** below is a(n)_____.

A

B



C



Answer each question with *Yes* or *No*.

7. Are all squares rectangles? _____

8. Are all faces of a cube rectangles? _____

9. Is a cube a rectangular prism? _____

CHAPTER 14

NAME _____

CHAPTER 14 PRACTICE TEST
Geometry

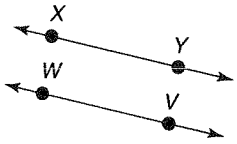
Circle the phrase that correctly describes each figure.

1. 

line AB line segment AB line A

2. 

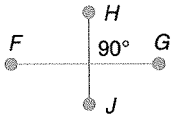
line S line segment ST line ST

3. 

line segment $XY \parallel$ line segment WV

line $XY \parallel$ line WV

line segment $XY \perp$ line segment WV

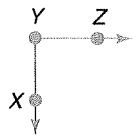
4. 

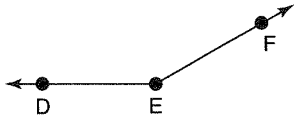
line $FG \parallel$ line HJ

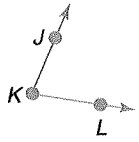
line $FG \perp$ line HJ

line segment $FG \perp$ line segment HJ

Name each angle. Give its measure and identify it as *acute, obtuse,* or *right.*

5. *a* 

b 

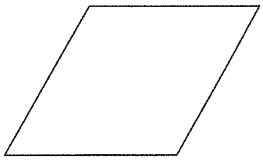
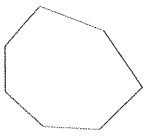
c 

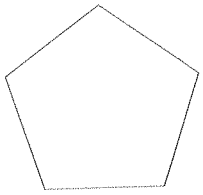
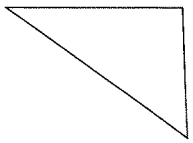
_____ _____ _____

_____ _____ _____

Write the letter for the name of each figure in the blank.

a *b*

6. _____  _____ 

7. _____  _____ 

a. hexagon
b. pentagon
c. triangle
d. heptagon
e. circle
f. quadrilateral
g. octagon