
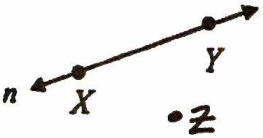
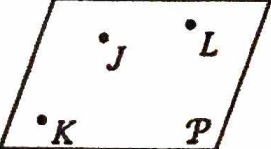
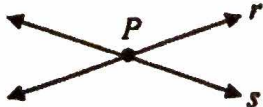
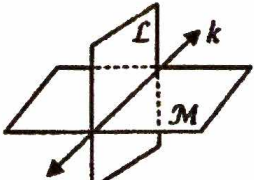


Name:

Date:

Topic: 1.1 Notes + Assignment Answers

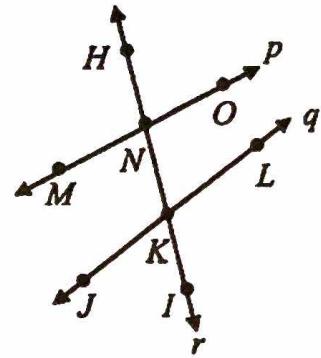
Class: Answers may vary

Main Ideas/Questions	Notes
<p>POINT</p> 	<ul style="list-style-type: none"> A point is a <u>location</u>. It has no <u>size</u> or <u>shape</u>. Always use a <u>CAPITAL LETTER</u> to name a point. <p>Example: <u>point A</u></p>
<p>LINE</p>  <p>X, Y, Z are non-collinear</p>	<ul style="list-style-type: none"> A line is made up of <u>points</u>. Any <u>2</u> points form a line. A line has no <u>thickness</u> or <u>width</u>. Name a line by any <u>two</u> points on the line, or a lowercase script letter. <p>Example: <u>XY, line n, line XY</u></p> <ul style="list-style-type: none"> COLLINEAR POINTS: Points that lie on the same line. NON-COLLINEAR POINTS: Points that do NOT lie on the same line. (Must be at least three points!)
<p>PLANE</p> 	<ul style="list-style-type: none"> A plane is a <u>flat surface</u> made up of points. Any <u>3</u> points make up a plane. A plane extends indefinitely in all directions. Name a plane by any <u>three</u> non-collinear points on the plane, or an uppercase script letter. <p>Example: <u>plane P, plane KJL</u></p> <ul style="list-style-type: none"> COPLANAR POINTS: Points that lie on the same plane. NON-COPLANAR POINTS: Points that do NOT lie on the same plane. (Must be at least four points!)
<p>Intersecting LINES & PLANES</p>	 <p>Two lines intersect at a <u>point</u>!</p>  <p>Two planes intersect at a <u>line</u>!</p>

* Answers may vary *

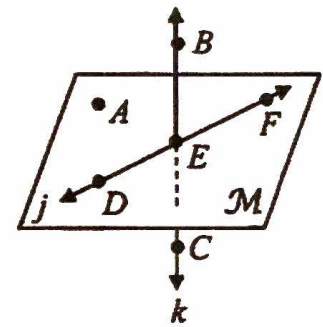
Naming Points, Lines, and Planes: Practice!

1. Use the diagram to the right to name the following.



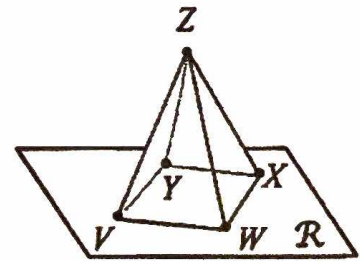
- a) Four collinear points. H, N, K, I
- b) A line that contains point M. line p
- c) A line that contains points H and K. line r
- d) Another name for line q. \overleftrightarrow{JL} , \overleftrightarrow{JK} , \overleftrightarrow{KL}
- e) The intersection of lines p and r. N

2. Use the diagram to the right to name the following.



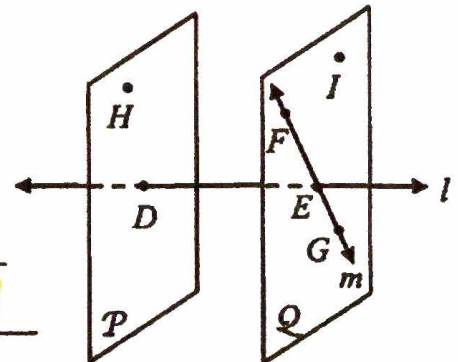
- a) A line containing point F. \overleftrightarrow{DE}
- b) Another name for line k. \overleftrightarrow{BE} , \overleftrightarrow{BC} , \overleftrightarrow{EC}
- c) A plane containing point A. plane M
- d) An example of three non-collinear points. A, B, D
- e) The intersection of plane M and line k. E

3. Use the diagram to the right to name the following.



- a) Three coplanar points. V, Y, X
- b) A plane containing point X. plane R
- c) The intersection of plane R and plane ZVY. \overline{VY}
- d) How many planes appear in the figure? 5
- e) How many planes contain point W? 3

4. Use the diagram to the right to name the following.



- a) The intersection of lines l and m. E
- b) Another name for plane Q. plane IFa
- c) Are points D and E collinear or coplanar? collinear
- d) How many times do planes P and Q intersect? 0

Name: _____

Unit 1: Geometry Basics

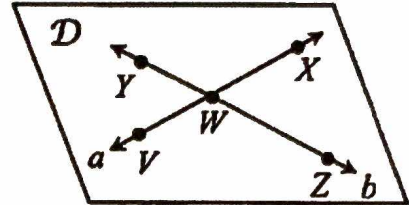


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Homework 1: Points, Lines, and Planes

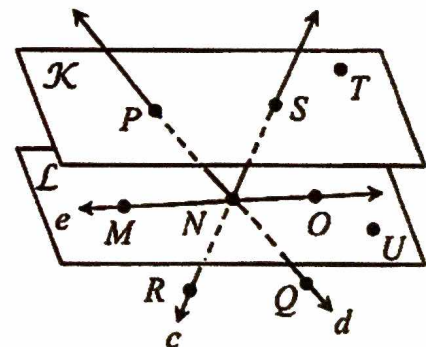
1. Use the diagram to answer the following questions.

- a) How many points appear in the figure? 5
- b) How many lines appear in the figure? 2
- c) How many planes appear in the figure? 1
- d) Name a line containing point V . line a
- e) Name the intersection of lines a and b . W
- f) Give another name for line b . \overleftrightarrow{XZ}
- g) Name three non-collinear points. Y, Z, V
- h) Give another name for plane D . plane XWZ



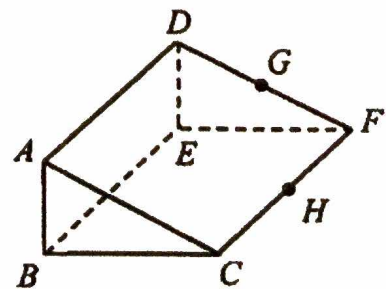
2. Use the diagram to answer the following questions.

- a) How many points appear in the figure? 9
- b) How many lines appear in the figure? 3
- c) How many planes appear in the figure? 2
- d) Name three collinear points. P, N, Q
- e) Name four non-coplanar points. T, U, R, Q
- f) Give another name for line e . \overleftrightarrow{MN}
- g) Name the intersection of \overleftrightarrow{PQ} and \overleftrightarrow{MO} . N
- h) Name the intersection of plane K and line c . S
- i) Give another name for plane L . plane NOU
- j) Give another name for \overleftrightarrow{PQ} . line d



3. Use the diagram to answer the following questions.

- a) How many points appear in the figure? 8
- b) How many lines appear in the figure? 9
- c) How many planes appear in the figure? 5
- d) Name three collinear points. C, H, F
- e) Name four coplanar points. D, A, B, E
- f) Name the intersection of planes ABC and ABE . \overline{AB}
- g) Name the intersection of planes BCH and DEF . \overline{EF}
- h) Name the intersection of \overline{AD} and \overline{DF} . D



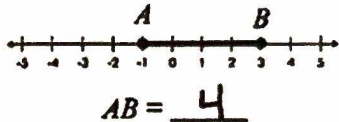
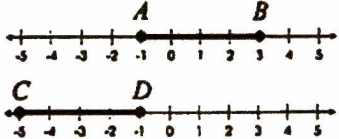


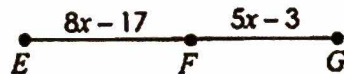
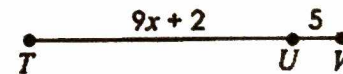


* Answers may vary

Name:

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Topic:

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Main Ideas/Questions	Notes/Examples	
MEASURING SEGMENTS	The distance between two points A and B be written as <u>the length of \overline{AB}</u> or <u>AB</u> .	 $AB = 4$
CONGRUENT SEGMENTS	If <u>$AB = CD$</u> , then the segments are congruent. This is written as <u>$\overline{AB} \cong \overline{CD}$</u> .	
SEGMENT ADDITION Postulate	If A , B , and C , are collinear points and B is between A and C , then <u>$AB + BC = AC$</u>	
Examples	Use the diagram below for questions 1 and 2.	1. If $PQ = 9$ and $QR = 28$, find PR . $9 + 28 = 37$
		2. If $QR = 17$ and $PR = 21$, find PQ . $21 - 17 = 4$
	3. If $EG = 71$, find the value of x .	4. If $TV = 14x - 8$, find TU .
	 $8x - 17 + 5x - 3 = 71$ $13x - 20 = 71$ $13x = 91$ $x = 7$	 $9x + 2 + 5 = 14x - 8$ $9x + 7 = 14x - 8$ $7 = 5x - 8$ $15 = 5x$ $x = 3$ $TU: 9(3) + 2 = 29$
	5. If $JL = 5x + 2$, find JL .	6. If $CE = 7x + 4$, find the value of x .
	 $27 + 3x - 1 = 5x + 2$ $3x + 26 = 5x + 2$ $26 = 2x + 2$ $24 = 2x$ $x = 12$ $JL: 5(12) + 2 = 62$	 $x + 3 + 8x - 9 = 7x + 4$ $9x - 6 = 7x + 4$ $2x - 6 = 4$ $2x = 10$ $x = 5$

7. If $SK = 13x - 5$, $KY = 2x + 9$, and $SY = 36 - x$, find each value.



$$SK: 13(2) - 5 = 21$$

$$x = 2$$

$$13x - 5 + 2x + 9 = 36 - x$$

$$15x + 4 = 36 - x$$

$$16x = 32$$

$$x = 2$$

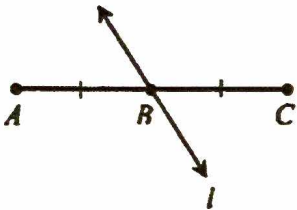
$$KY: 2(2) + 9 = 13$$

$$SK = 21$$

$$KY = 13$$

$$SY = 34$$

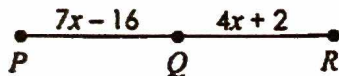
MIDPOINT of a Segment



- The midpoint of a segment is a point that divides the segment into two congruent segments.
- A line, ray, or segment that intersects a segment at its midpoint is said to bisect the segment and is called the segment bisector.
- In the diagram to the left, B is the midpoint of AC and line l is a segment bisector of AC.

Examples

8. If Q is the midpoint of \overline{PR} , find the value of x .



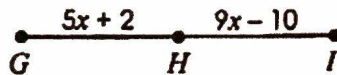
$$7x - 16 = 4x + 2$$

$$3x - 16 = 2$$

$$3x = 18$$

$$x = 6$$

9. If H is the midpoint of \overline{GI} , find GH .



$$5x + 2 = 9x - 10$$

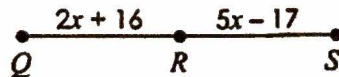
$$2 = 4x - 10$$

$$12 = 4x$$

$$x = 3$$

$$GH: 5(3) + 2 = 17$$

10. If R is the midpoint of \overline{QS} , find QS .



$$2x + 16 = 5x - 17$$

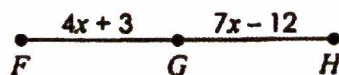
$$16 = 3x - 17$$

$$33 = 3x$$

$$x = 11$$

$$QR: 2(11) + 16 = 38 \quad QS: 2(38) = 76$$

11. If G is the midpoint of \overline{FH} and $FH = 6y - 2$, find y .



$$4x + 3 = 7x - 12$$

$$3 = 3x - 12$$

$$15 = 3x$$

$$x = 5$$

$$6y - 2 = 46$$

$$6y = 48$$

$$y = 8$$

$$FG: 4(5) + 3 = 23$$

$$FH: 2(23) = 46$$