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Math 8 K&E

Geometry

Geometry

The Language of Geometry

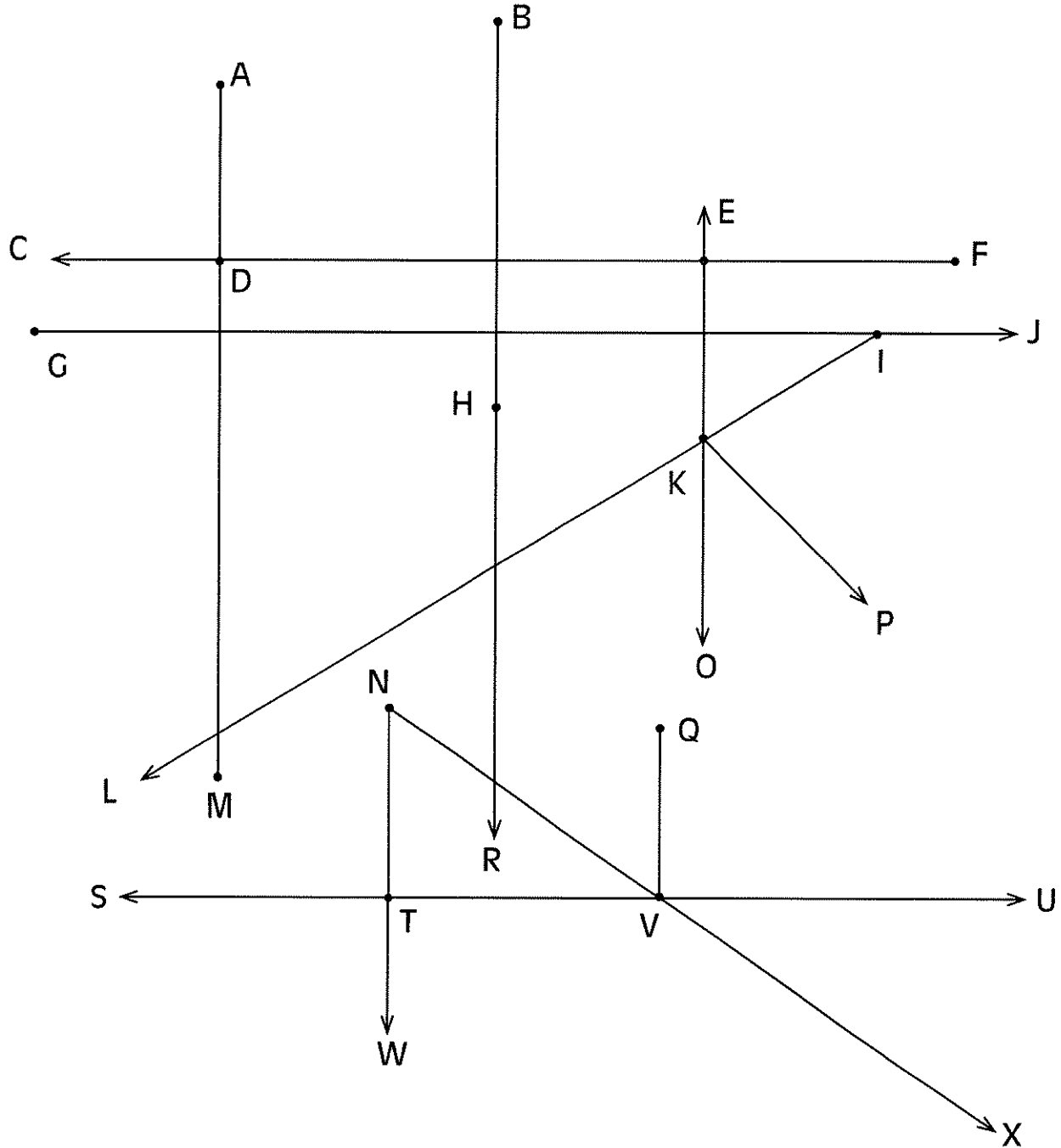
The terms we use in geometry have definite meanings. Here are five of the most common terms. Find examples in your textbook.

Term	Definition	Diagram	Symbol
Points	<ul style="list-style-type: none">• Symbol to identify a position.		
Lines	<ul style="list-style-type: none">• Made up of a set of points.• It goes on forever in both directions.		
Ray	<ul style="list-style-type: none">• A part of a line. It begins with a point and goes on forever in one direction only.		
Line Segment	<ul style="list-style-type: none">• A part of a line with 2 end points.		
Angle	<ul style="list-style-type: none">• Formed by 2 rays with one common end point.		



Practice: The Language of Geometry

1. Find as many **lines**, **points**, **rays**, **line segments**, and **angles** as you can.



**Practice:** The Language of Geometry

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line segment

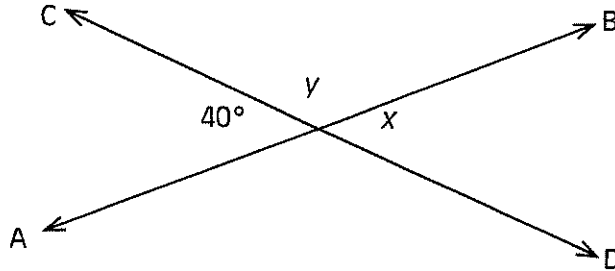
line

angle

ray

Place all of the lines, rays, line segments, and angles in the spaces below.

- | | | | |
|-----|--|-----|-----|
| 1. | | 17. | 33. |
| 2. | | 18. | 34. |
| 3. | | 19. | 35. |
| 4. | | 20. | 36. |
| 5. | | 21. | 37. |
| 6. | | 22. | 38. |
| 7. | | 23. | 39. |
| 8. | | 24. | 40. |
| 9. | | 25. | 41. |
| 10. | | 26. | 42. |
| 11. | | 27. | 43. |
| 12. | | 28. | 44. |
| 13. | | 29. | 45. |
| 14. | | 30. | 46. |
| 15. | | 31. | 47. |
| 16. | | 32. | 48. |

**Practice:** Intersecting and Perpendicular Lines 1 of 2**Example:** Find x and y .

Because we now know that intersecting lines form equal opposing angles, we can determine that $x = 40^\circ$. What about y ?

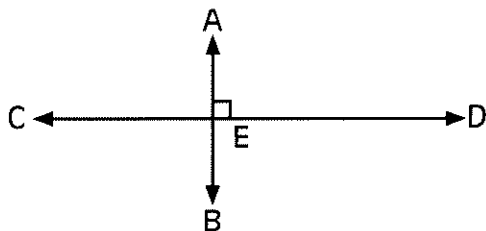
Notice that y is the supplement of 40° .

Therefore, $y = 180^\circ - 40^\circ = 140^\circ$.

1. When two lines intersect at a right angle, we call them

_____.

2. AB intersects CD such that $\angle AED = 90^\circ$. How do the other 3 angles measure?

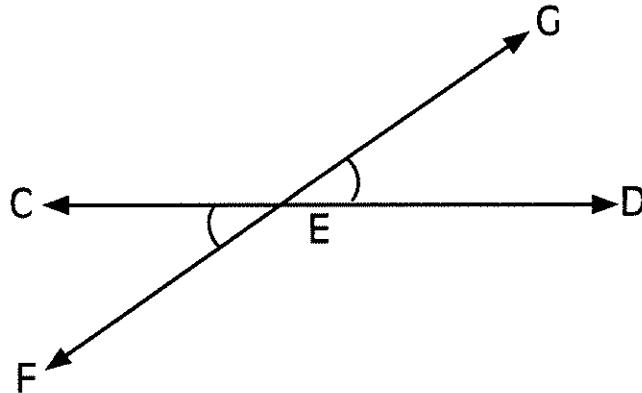


What if the lines intersect at some other measure than 90° ?

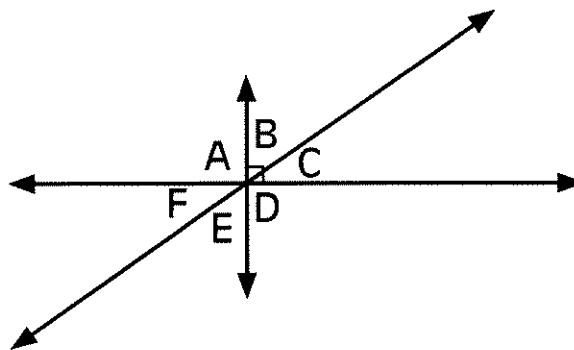

Practice: Intersecting and Perpendicular Lines 2 of 2

3. When two lines intersect, the _____ angles

formed are _____ $\angle GED = \angle CEF$ and $\angle GEC = \angle DEF$



4. Recall the definitions of *complementary* and *supplementary* angles. What are the *complements* and *supplements* of $\angle GED$ and $\angle CEF$?

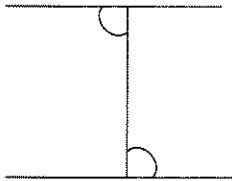


↳ NOTES:

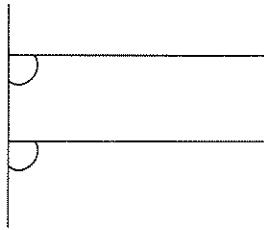
Angles and Parallel Lines

Definitions:

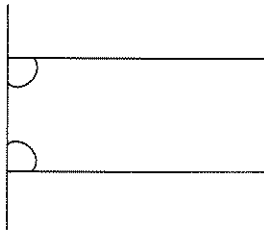
Alternate Angles: equal



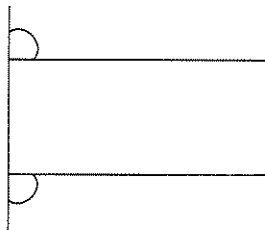
Corresponding Angles: equal



Co-interior Angles: add up to 180 degrees



Co-exterior Angles: add up to 180 degrees

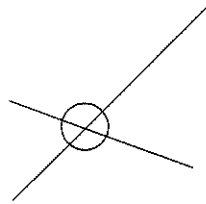


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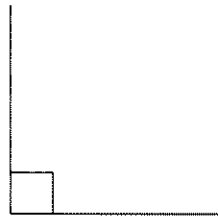
Angles and Parallel Lines

Definitions:

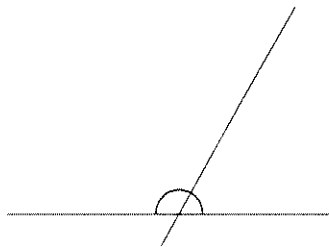
Opposite Angles: equal angles formed by two intersecting lines



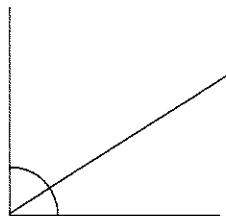
Right Angle: equals 90 degrees



Supplementary: two angles whose sum is 180 degrees



Co-exterior Angles: add up to 180 degrees

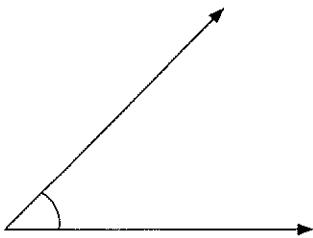


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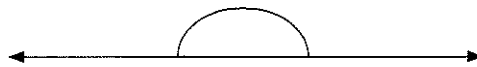
Classifying Angles

We name angles according to their degrees. There are five classifications of angles.

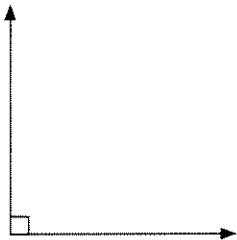
1. **Acute Angle:**
less than 90 degrees



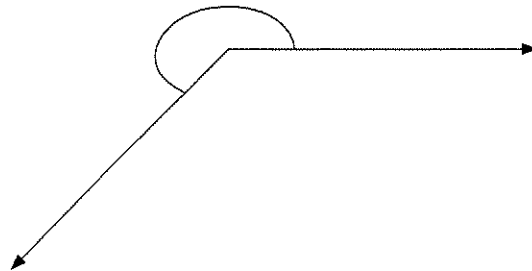
4. **Straight Angle:**
180 degrees



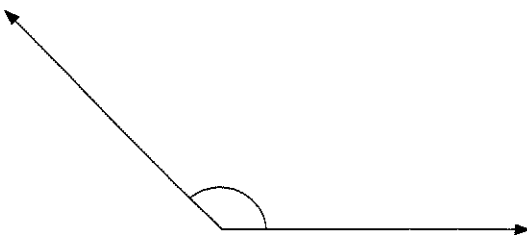
2. **Right Angle:**
90 degrees



5. **Reflex Angle:**
between 180 degrees
and 360 degrees



3. **Obtuse Angle:**
between 90 degrees
and 180 degrees

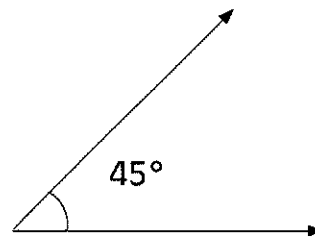
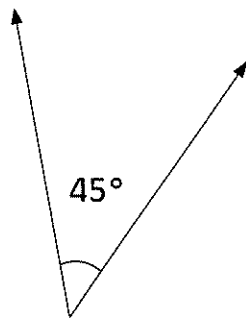


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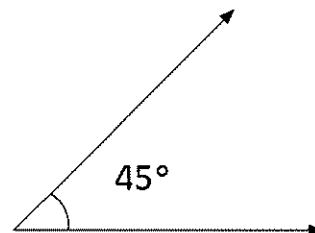
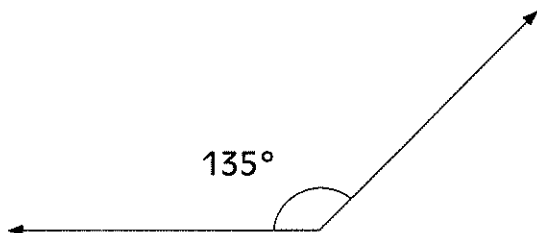
Classifying Angles

There are also two major classifications of paired angles.

Complimentary Angles are two acute angles whose sum is 90 degrees.



Supplementary Angles are pairs of acute and obtuse angles whose sum is 180 degrees.



**Practice:** Angles and Parallel Lines

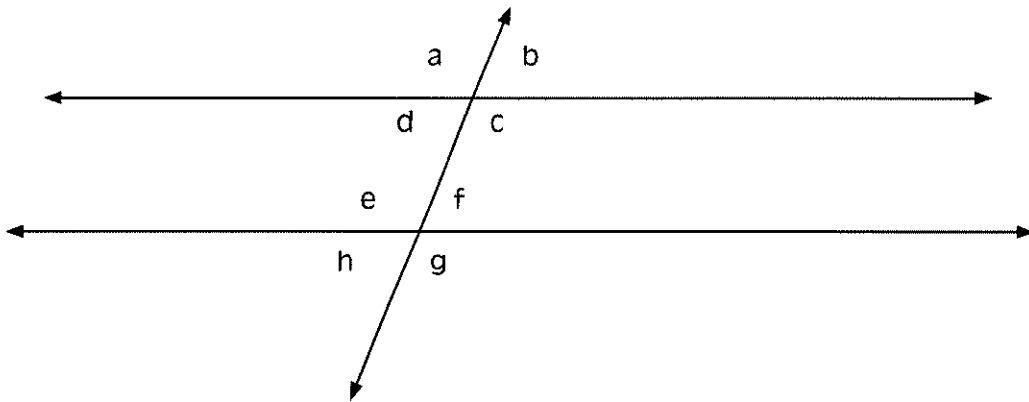
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List the examples with the appropriate angle relationship. More than one example may match with a relationship.

Examples:

$\angle a$ and $\angle h$	$\angle a$ and $\angle c$	$\angle c$ and $\angle f$
$\angle d$ and $\angle f$	$\angle c$ and $\angle e$	$\angle a$ and $\angle b$
$\angle h$ and $\angle f$	$\angle f$ and $\angle g$	$\angle b$ and $\angle g$
$\angle b$ and $\angle f$	$\angle d$ and $\angle h$	

- Alternate Angles
- Corresponding Angles
- Co-interior Angles
- Co-exterior Angles
- Supplementary
- Complementary
- Opposite



**Practice: Angles and Parallel Lines**

2 of 2

1. Find the measurement of each unknown angle below.

b =

c =

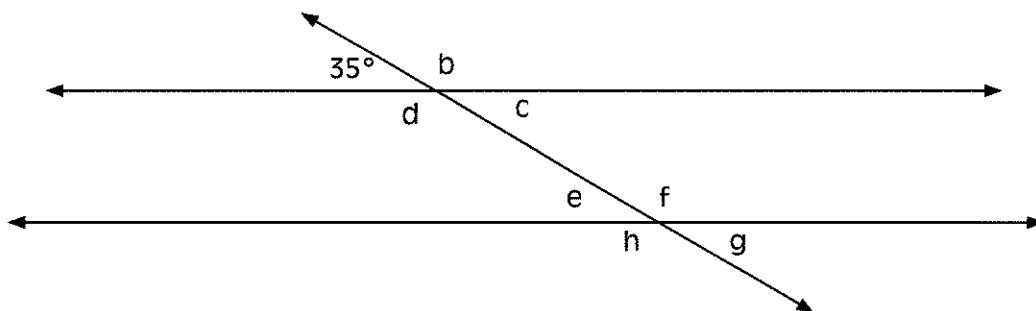
d =

e =

f =

g =

h =

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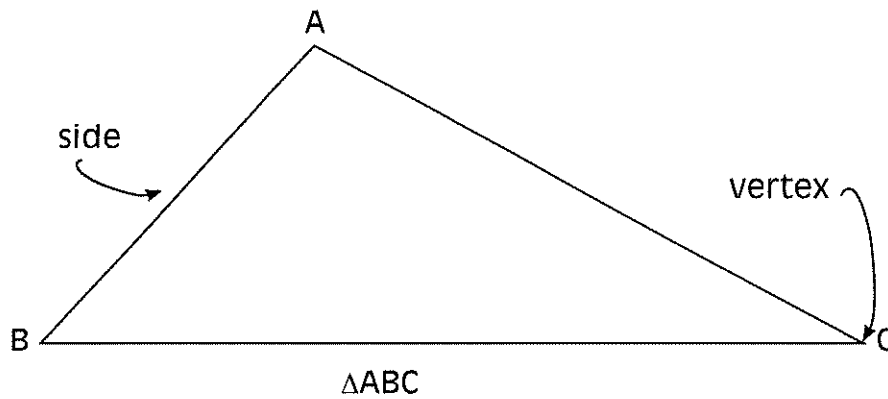
Date: _____

Practice: Classifying Triangles

1 of 2

1. A triangle has three _____ and _____ angles.
2. The point where two sides meet is called a _____.

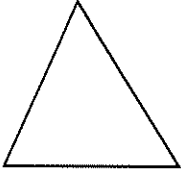
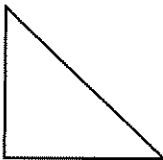

The symbol Δ replaces the word "triangle" in the name of the figure.

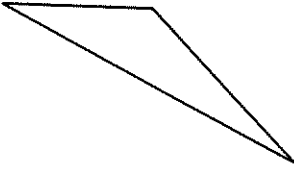

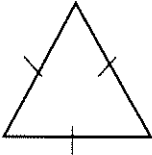


3. We classify triangles by the measures of their _____.

**Practice: Classifying Triangles**

2 of 2

Acute	Right	Obtuse
		
An acute triangle has _____ acute angles.	A right triangle has _____ right angle.	An obtuse triangle has _____ obtuse angle.

Scalene	Isosceles	Equilateral
		
A scalene triangle has _____ sides of equal length.	An isosceles triangle has _____ sides of equal length.	An equilateral triangle has _____ sides of equal length.

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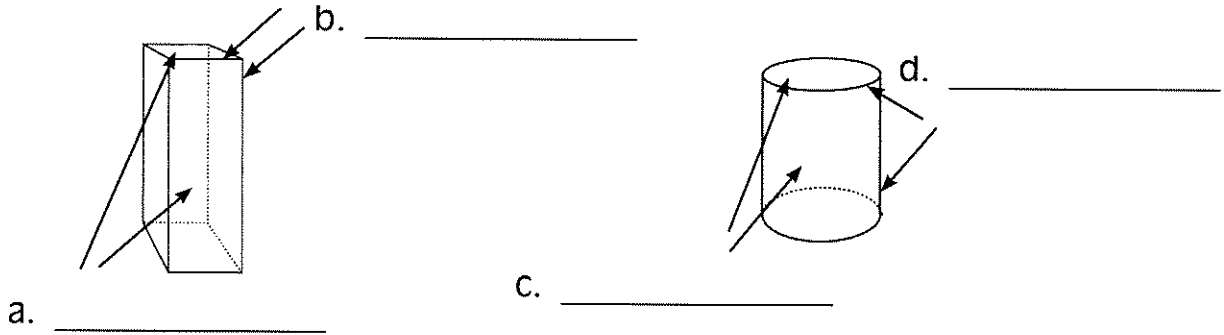
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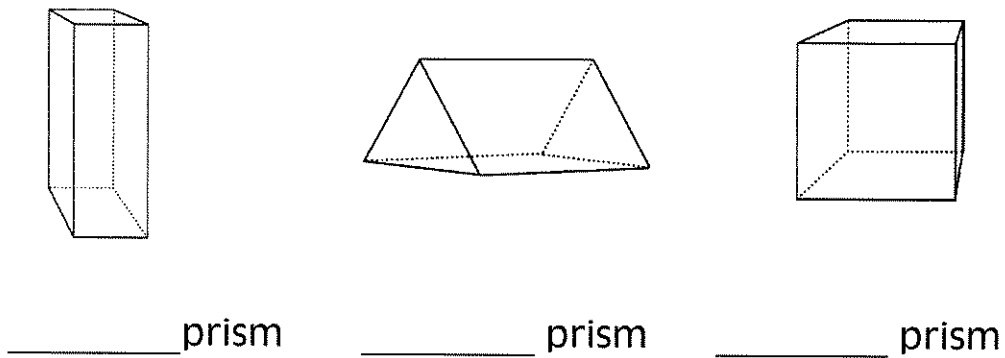
Date: _____

Shape and Space – Unit Test

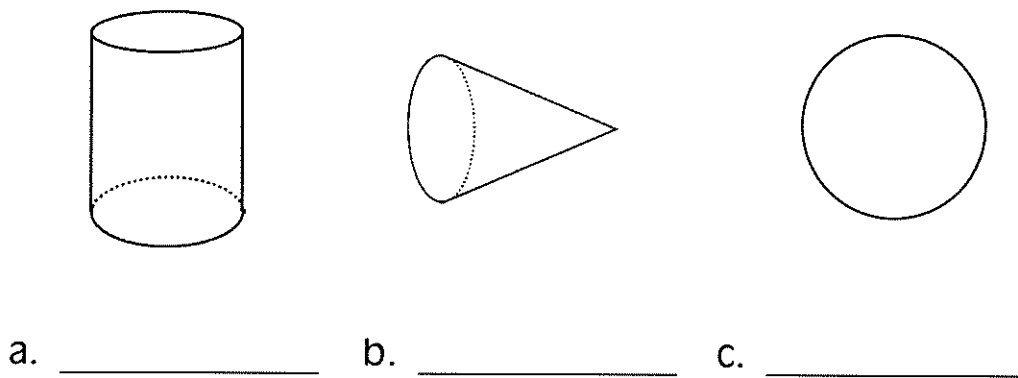
1. Label the face and the edge on the objects below.



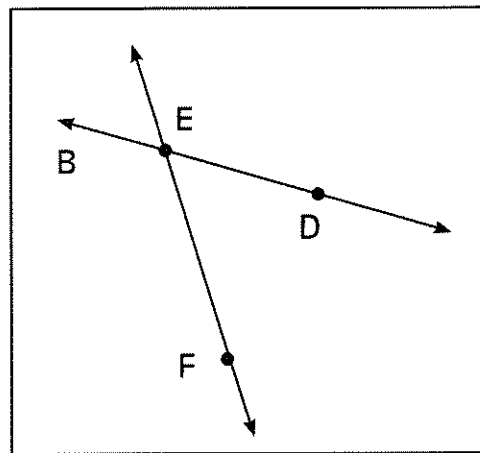
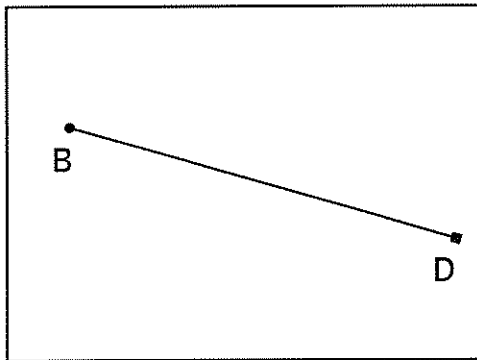
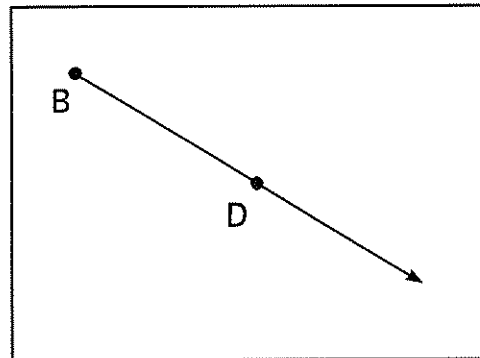
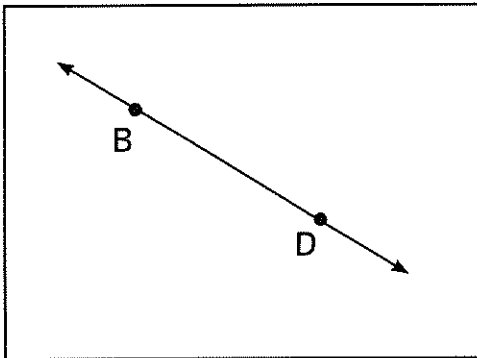
2. Label the prisms below.



3. Label the objects below.



4. For the following, correctly label each example with the following: angle, ray, line, line segment.

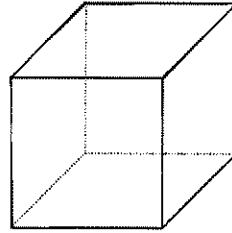


5. Write in the definitions for the following type of angles:

- a. Reflex _____
- b. Acute _____
- c. Straight _____
- d. Obtuse _____

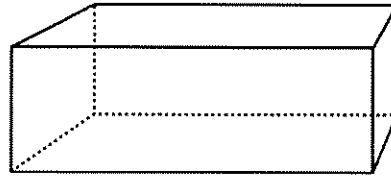
6. How many edges does a cube have?

- a. 2
- b. 4
- c. 8
- d. 12



7. How many faces does a rectangular prism have?

- a. 1
- b. 2
- c. 4
- d. 6



8. Which angle is acute?

