

Name: Key  
 Class: \_\_\_\_\_

## Show What You Know – Angles

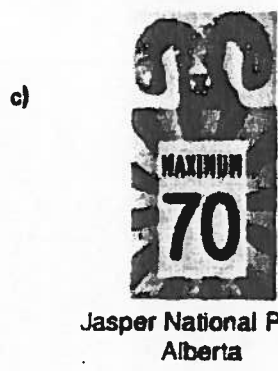
1. Identify as many angles as you can in the signs below. Name each angle as acute, obtuse, straight, right, or reflex. Tell how you know. Describe the location of each angle.



interior angles  
 → all obtuse angles  
 → right angles  
 → straight angles



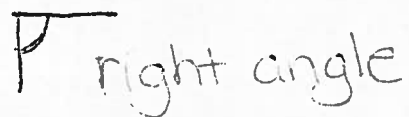
→ right angles  
 → straight angles  
 W & N → acute  
 and reflex  
 angles



corners of the  
 sign are right angles  
 acute, obtuse angles  
 in the maximum  
 straight angle - |

2. Draw a line segment on grid paper. Visualize rotating the line segment about one of its points. Which type of angle is formed with each rotation?

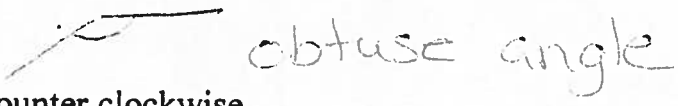
a)  $\frac{1}{4}$  turn clockwise



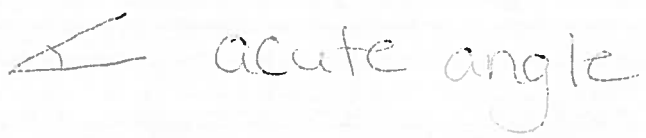
b) between a  $\frac{1}{2}$  turn and a full turn clockwise



c) between a  $\frac{1}{4}$  turn and a  $\frac{1}{2}$  turn counter clockwise



d) less than a  $\frac{1}{4}$  turn counter clockwise



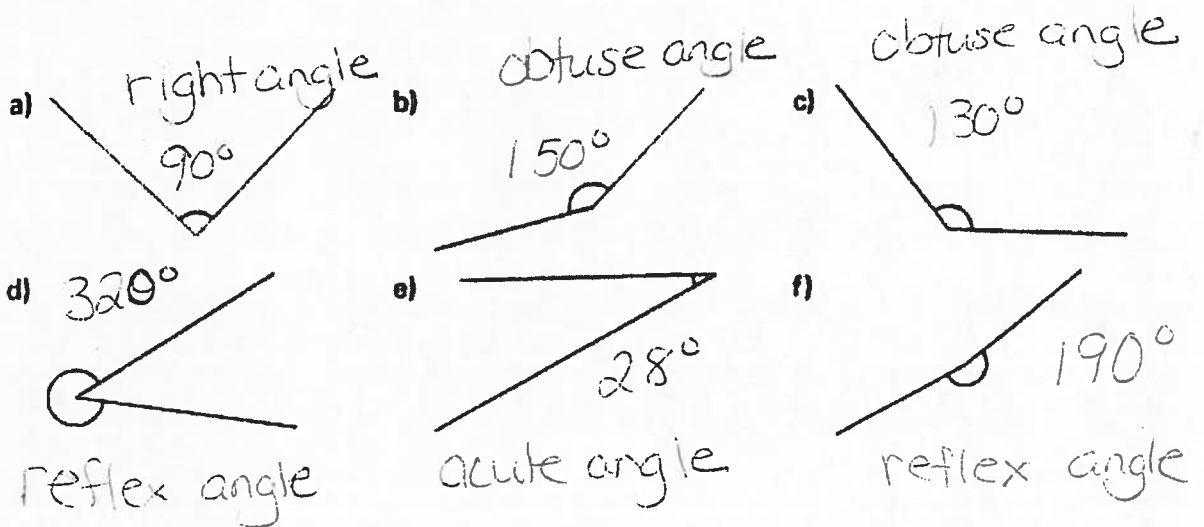
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3. Jake says he can make an angle smaller by making the arms shorter.  
Do you agree? Why or why not?

No, the measure of an angle stays the same if I make the arms shorter.

4. For each angle: The angle is not affected.
- Choose an appropriate reference angle:  $45^\circ$ ,  $90^\circ$ ,  $180^\circ$ . Estimate the size of each angle.
  - Use a protractor to measure each angle.
  - Order the angles from least to greatest measure.
  - Name each angle as acute, obtuse, reflex, right, or straight



Order from least to greatest

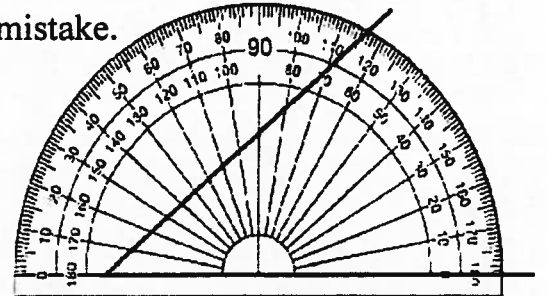
e, a, c, b, f, d

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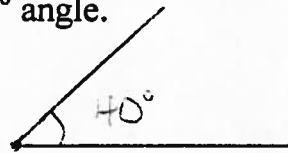
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5. A student used a protractor to measure this angle. The student says the angle measures  $65^\circ$ . Is the student correct? If your answer is yes, explain how you know. If your answer is no, describe the student's mistake.

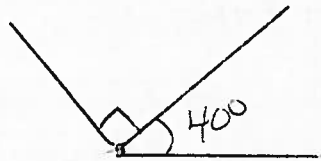
No, the student did not place the center of the protractor on the vertex of the angle.



6. a) Use a protractor to draw a  $40^\circ$  angle.

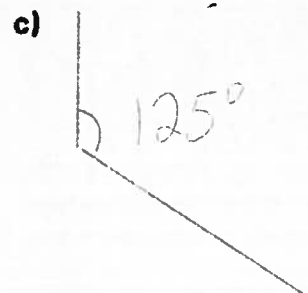
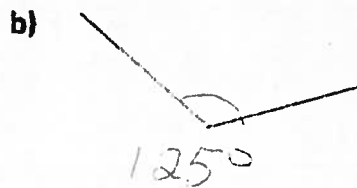


- b) Do not use a protractor. Draw an angle that is  $90^\circ$  greater. Describe the strategy you used.



- c) Use a protractor to check the angle in b. ✓

7. Use a ruler and protractor to use each line segment as one arm to draw a  $125^\circ$  angle.



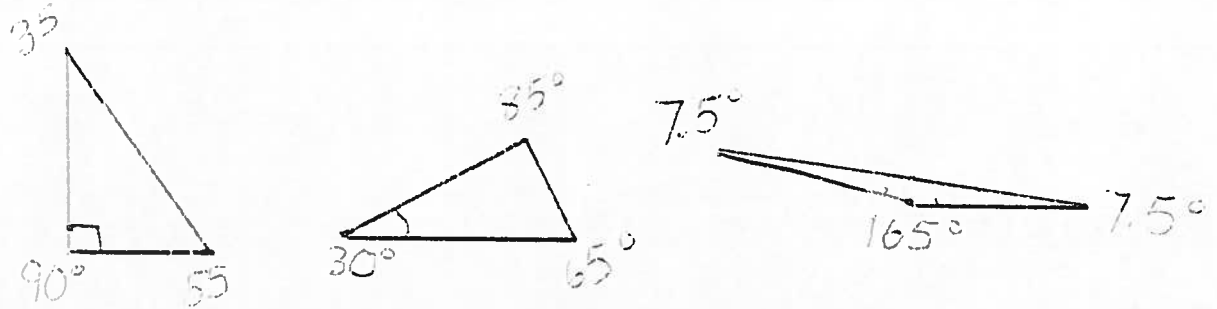
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8. Use a ruler and a protractor.

a) Draw, then label each angle below with its measure:

- Right angle
- Acute angle
- Obtuse angle



b) For each angle in part a:

- Join the arms together to make a triangle
- Measure and label only 2 of the angles
- Use the measures of the 2 angles to find the 3<sup>rd</sup> angle

c) Explain the strategy you used to find the third angle.

$$180 - (2 \text{ angles I know}) = 3^{\text{rd}} \text{ angle}$$

9. Two angles of a triangle are given. Find the measure of the third angle.

a)  $70^\circ, 25^\circ, \underline{85^\circ}$   $180 - 95 = 85^\circ$

b)  $62^\circ, 71^\circ, \underline{47^\circ}$   $180 - 133 = 47^\circ$

c)  $58^\circ, 74^\circ, \underline{48^\circ}$   $180 - 132 = 48^\circ$

d)  $115^\circ, 43^\circ, \underline{22^\circ}$   $180 - 158 = 22^\circ$

10. A quadrilateral has angles measuring  $60^\circ, 50^\circ,$  and  $120^\circ$ . What is the measure of the 4<sup>th</sup> angle? How do you know?

$$360^\circ - 230^\circ = 130^\circ$$