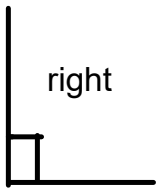
Warm Up Gr. 6
Date: _____

Name that angle!

a

obtuse

b

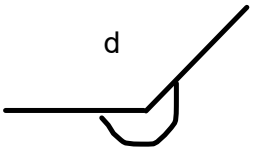


right

c

straight

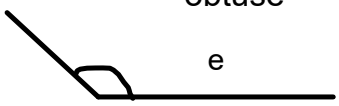
d



reflex

obtuse

e



Practice

Use a piece of paper with a square corner when it helps.

1. Which angle is an acute angle? A right angle? An obtuse angle? A straight angle? A reflex angle?

a) 

right

b) 

acute

c) 

Obtuse

d) 

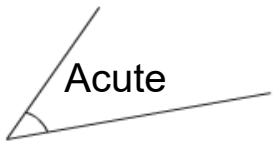
Reflex

e) 

Straight

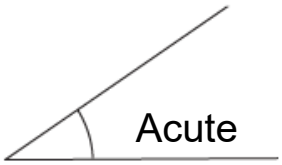
2. Name each angle as a right angle, an acute angle, an obtuse angle, a straight angle, or a reflex angle. How did you find out?

a)



Acute

b)



Acute

Reflex

c)

Reflex

d)

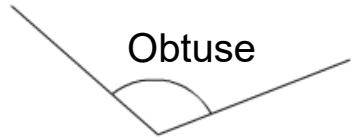
Obtuse

Obtuse

e)

Reflex

f)



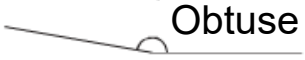
Obtuse

Acute

g)

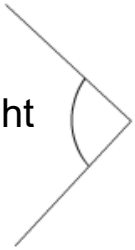
Reflex

h)



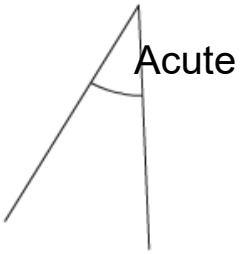
Obtuse

i)



right

j)



Acute

3. Your teacher will give you a large copy of these flags.
List the flags with:

a) a right angle
b) an acute angle
c) an obtuse angle
d) a reflex angle

On each flag, label an example of each type of angle you find.


British Columbia


Saskatchewan


Nunavut


Canada

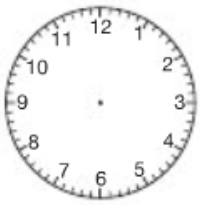
4. Draw a line segment on grid paper.
Visualize rotating the line segment about one of its end points.
Which type of angle is formed by each rotation?

a) a $\frac{1}{2}$ turn
b) a $\frac{1}{4}$ turn clockwise
c) a $\frac{3}{4}$ turn counterclockwise

Use tracing paper to check.

TIP

5. a) For each time below, which type of angle is formed by the hour hand and minute hand on a clock? How did you find out?
   i) 2:15
   ii) 3:35
   iii) 9:00
   iv) 12:30
   v) 1:45

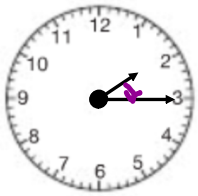


   b) Would the size of each angle change if the minute hand was shorter? Justify your answer.

hour to min

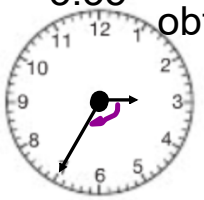
Steam Clock, Gastown, Vancouver

2:15



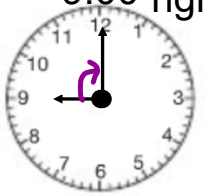
acute

3:35



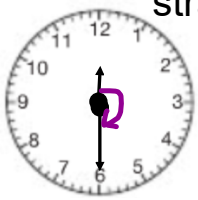
obtuse

9:00



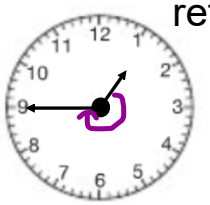
right

12:30



straight

1:45



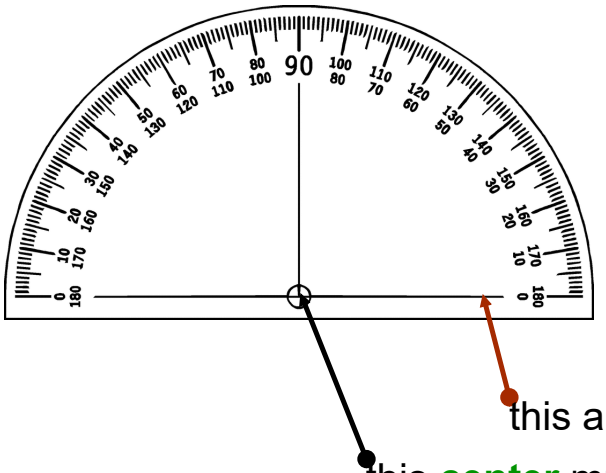
reflex

6. Find 5 angles in your classroom.
Try to find one example of a right angle, an acute angle, an obtuse angle, a straight angle, and a reflex angle.
Sketch each angle.
Write where you found each angle, then label the angle with its name.
How did you decide how to name each angle?
Which angle was easiest to find?
Why do you think so?

corner

7

7. Use square dot paper.
How many different angles can you draw on a 3-by-3 grid?
Classify the angles.
Show your work.



This is a standard protractor. It is used to measure angles, in degrees.

this arm must be placed on one of the arms

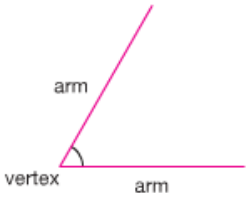
this **center** must be placed in the vertex of the angle

Angle Using a Protractor? | 4th Grade Math

Connect

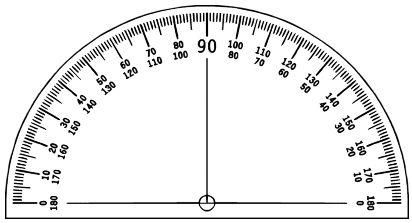
A protractor has 2 scales so that we can measure angles opening different ways.

➤ To measure this angle using a protractor:



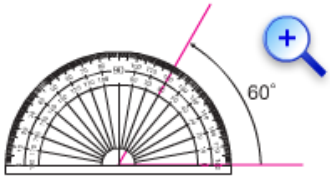
Step 1

Place the protractor on top of the angle.
The vertex of the angle is at the centre of the protractor.
One arm of the angle lines up with the base line of the protractor.

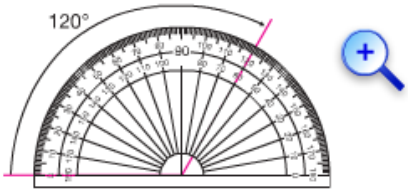


Step 2

Find where the other arm of the angle meets the protractor.
Since the arm along the base line passes through 0° on the inner scale, use the inner scale.
Follow the inner scale around.
The angle measures 60°.

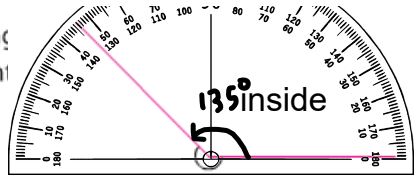


➤ This diagram shows when you would use the outer scale to measure an angle.



Since the arm along the base line of this angle passes through 0° on the outer scale, use the outer scale. The angle measures 120°.

➤ We can use a protractor to measure this reflex ang
A reflex angle is the outside angle of an acute, right
or obtuse angle.

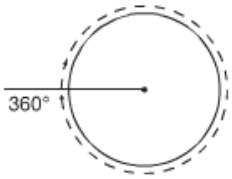


Step 1

Use the protractor to measure
the inside angle.
The inside angle measures 135°

Step 2

A complete turn is 360°.

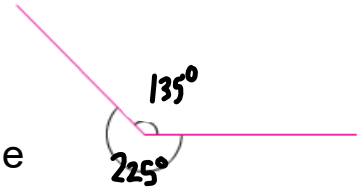


REFLEX

To find the measure of the reflex angle, we subtract:

360° - inside angle
= 360° - 135°

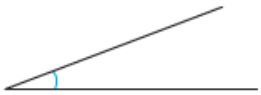
=225°



Must study

➤ We name angles according to their measures in degrees.

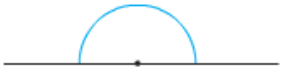
The measure of an **acute angle** is less than 90°.



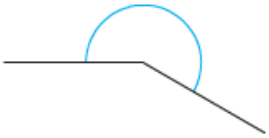
The measure of a **right angle** is 90°.

The measure of an **obtuse angle** is between 90° and 180°.

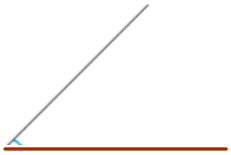
The measure of a **straight angle** is 180°.



The measure of a **reflex angle** is between 180° and 360°.

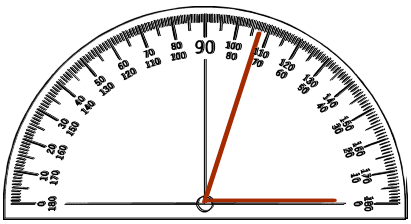


The measure of one-half a right angle is 45°.

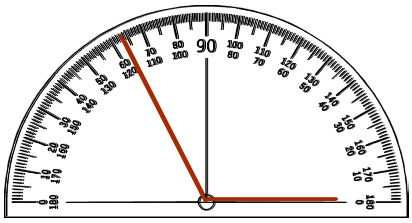


To estimate the measure of an angle, we can use 45°, 90°, and 180° as reference angles.

#1) What is the measure of each angle? Explain how you know.



73°



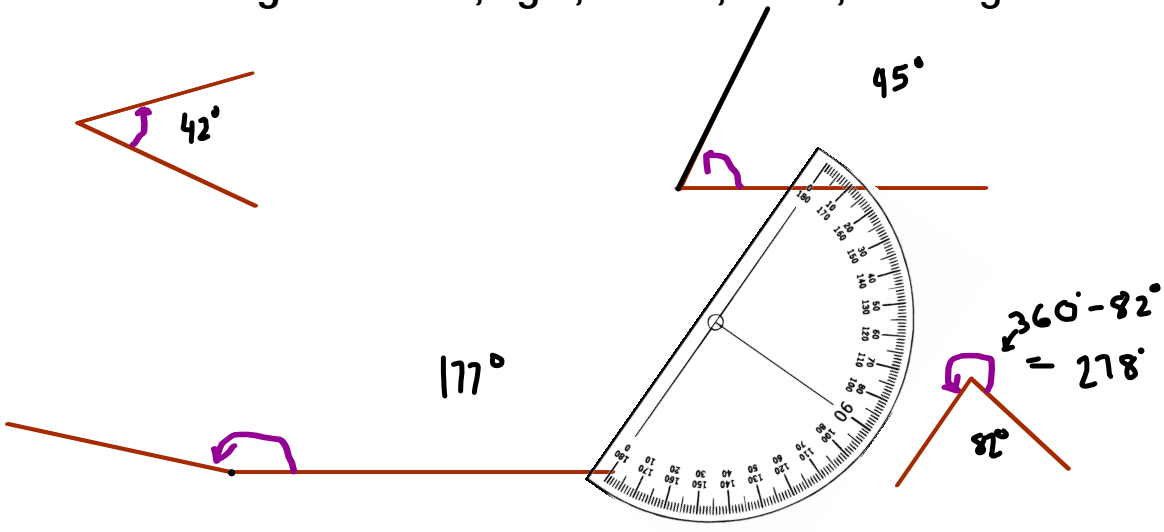
116°

2) For each angle:

choose an appropriate reference angle: 45°, 90°, or 180° . Estimate the size of the angle.

Use a protractor and measure the angle (was your estimate close)

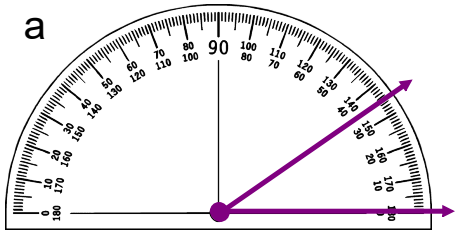
Name eache angle as acute, right, obtuse, reflex, or straight.



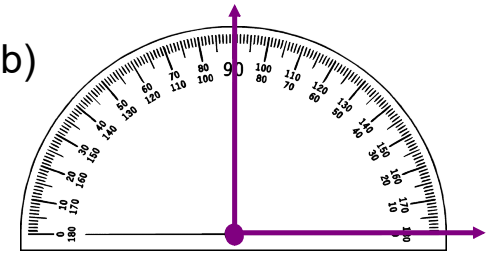
Practice Page 136

#1) What is the measure of each angle? Explain how you know.

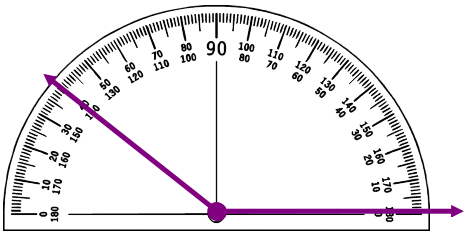
a



b)



c)

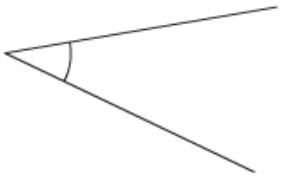


TIP

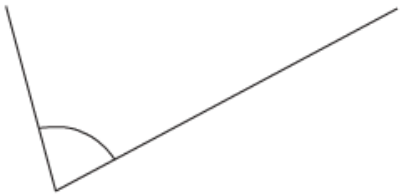
2. For each angle:
   - Choose an appropriate reference angle: 45°, 90°, 180°
     Estimate the size of the angle.
   - Use a protractor to find the angle measure.
     How close was your estimate to the actual measure? Explain.
   - Name each angle as acute, right, obtuse, or straight.

Don't do

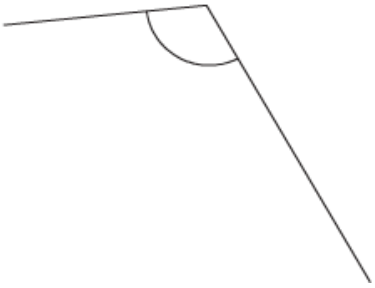
a)



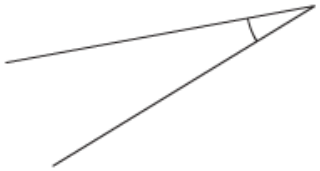
b)



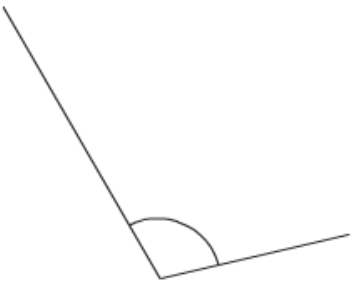
c)



d)

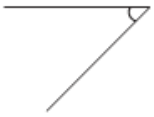


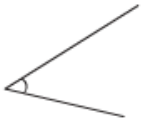
e)



f)

3. Which of these angles do you think measures 45°?
   Check your estimates with a protractor. What did you find out?

a) 

b) 

c) 

d) 

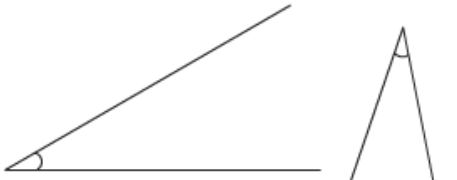
e) 

f) 

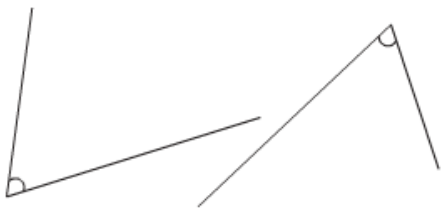
Don't do

4. Measure each angle.
Do the angles in each pair have the same measure?

a)



b)



Don't do

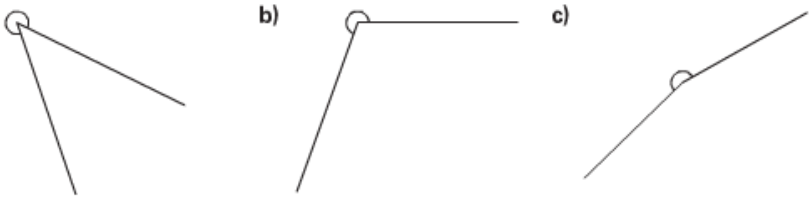
Do the lengths of the arms affect the measure of the angle? Explain.
Does the position of the angle affect the measure? Explain.

5. How can you tell whether you used the correct scale on the protractor to measure an angle?
Include an example in your explanation.

Don't do

6. Use a protractor to find the measure of each reflex angle.
How can you check that your measure is correct?

a) b) c)



Don't do

7. Use a protractor to solve each riddle.

A E K x M T

Don't do

a) I have 4 equal angles.
Each angle measures 90°.
Which letter am I?

b) I do not have any angles that measure 90°.
I have 3 angles that measure 60°.
I have 2 angles that measure 120°.
Which letter am I?

c) I have 2 right angles.
I have 1 acute angle.
I have 1 obtuse angle.
Which letter am I?

d) Make up your own letter riddle.
Trade riddles with a classmate.
Solve your classmate's riddle.

8. Name 4 objects in your classroom that have:
   a) an angle greater than 100°
   b) an angle less than 60°
   Use a protractor to check your answers.

Don't do

9. A student measured this angle and said it measured 60°.
Do you agree? Explain.

Don't do