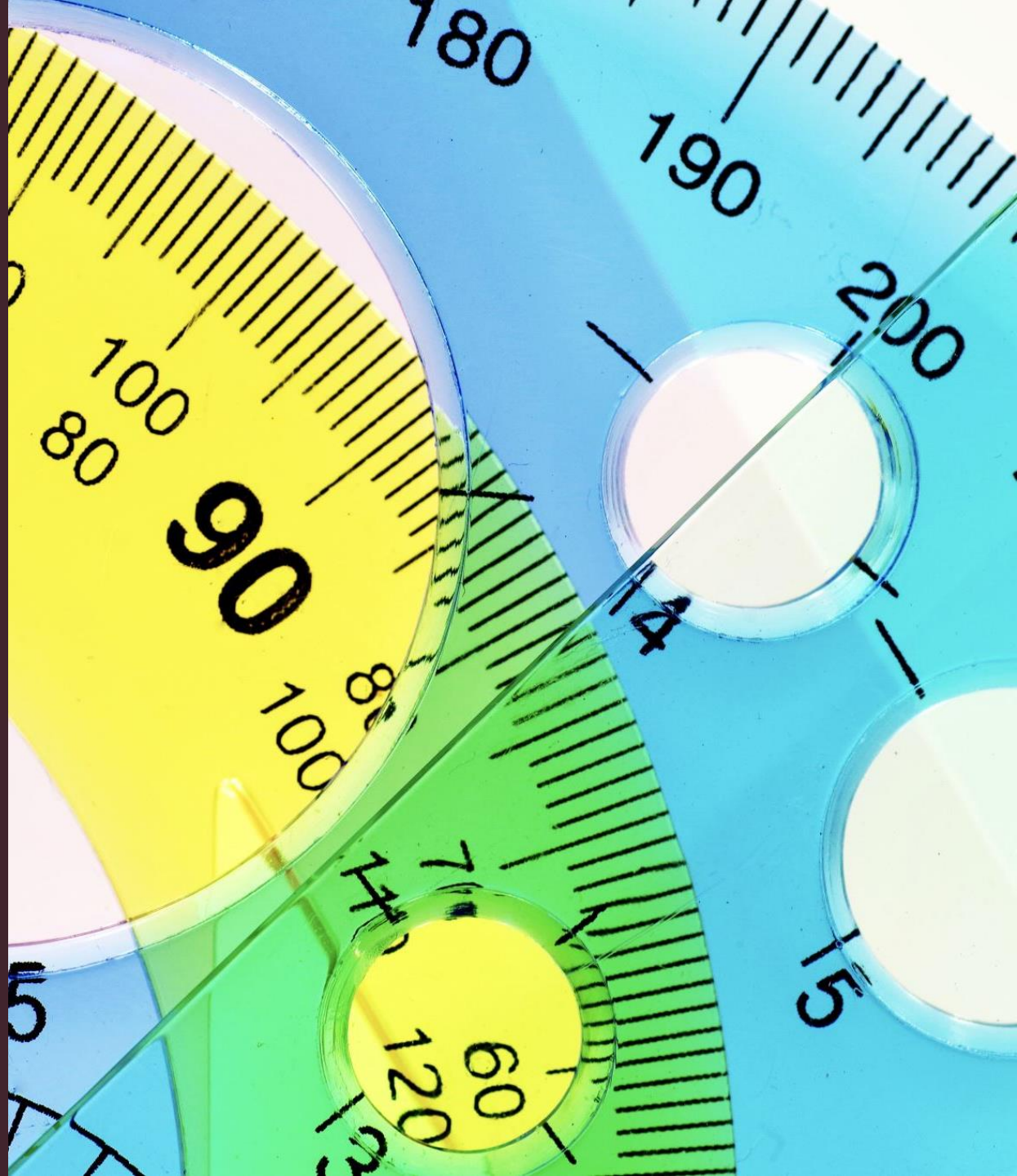
Partie 5

Constructing Angles

Construire les angles

Without using a protractor, how could you draw a 90° angle?
A 45° angle?
A 135° angle?

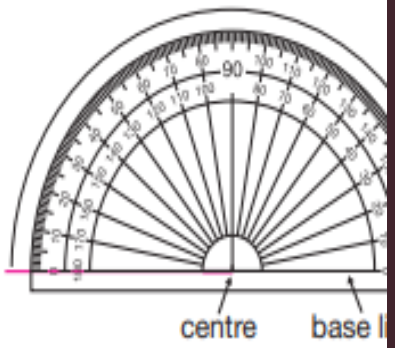


Connect

To draw an angle with a given measure, we use a ruler and a protractor.

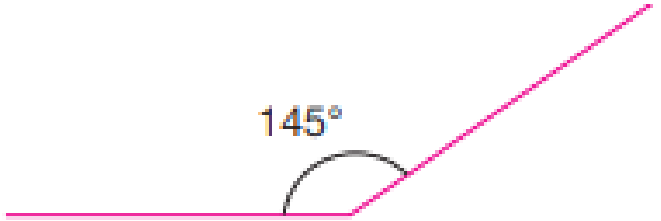
➤ To draw an angle that measures 145°:

- Use a ruler. Draw a horizontal line.
  Use the line as one arm of the angle.
- Place the protractor on the arm.
  One end of the arm is at the centre
  of the protractor.
  The arm lines up with the base line
  of the protractor.
  Start at 0° on the arm along the base line.
  Count around the protractor until you reach 145°.
  Make a mark at 145°.



You can measure from 0° to 180° clockwise or counterclockwise. Remember to start at 0° when you draw an angle.

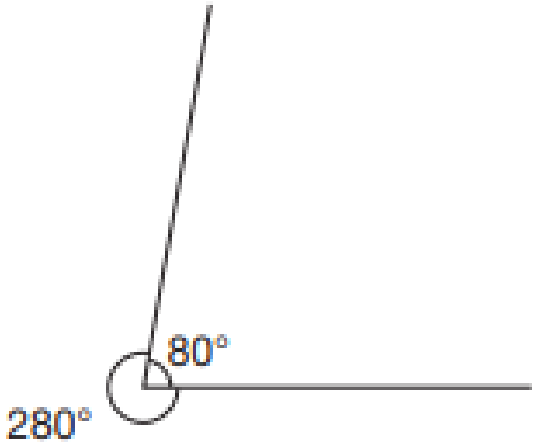
- Remove the protractor.
  Draw a line to join the end of the arm at the centre of the protractor with the mark at 145°.
  Label the angle with its measure.



➤ To draw an angle that measures 280°:

A 280° angle is a reflex angle.

So, draw the angle that makes up a complete turn:
$360° - 280° = 80°$
Then, 280° is the outside angle.

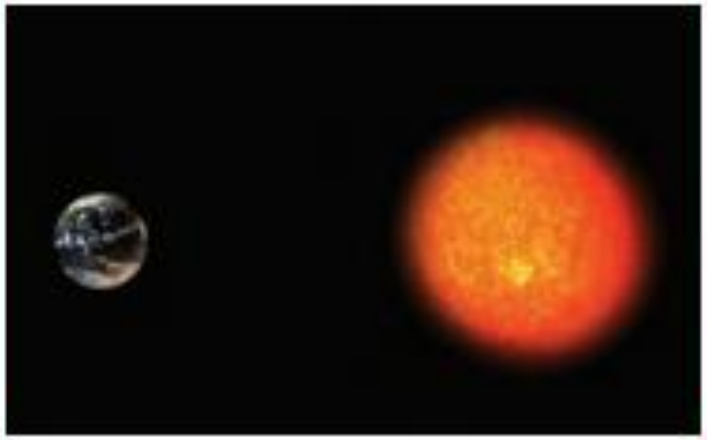


280° + 80° = 360°

Math Link

Science

It takes about 365 days for the Earth to make one complete revolution around the Sun. The number of degrees in a complete turn is 360°. So, the Earth travels about 1° around the Sun each day.



Slide 6.

Question 1: Owen says he can make an angle smaller by making the arms shorter. Do you agree? Why or why not?

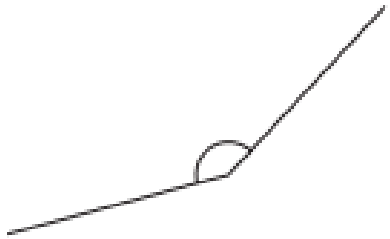
Question 2:

For each angle:

- Choose an appropriate reference angle: 45°, 90°, 180°
  Estimate the size of the angle.
- Use a protractor to measure each angle.
- Order the angles from least to greatest measure.
- Name each angle as acute, right, obtuse, straight, or reflex.

a)

b)



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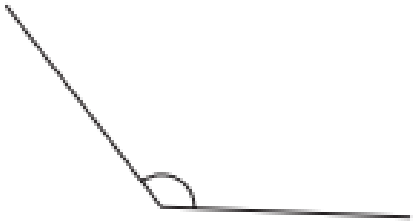

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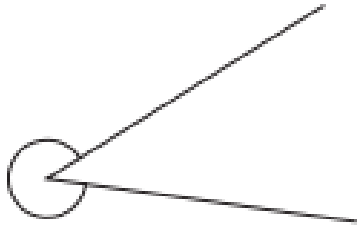

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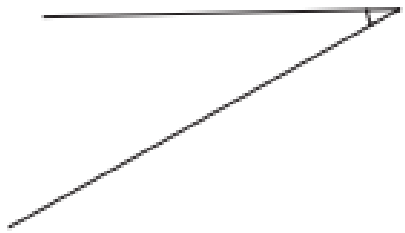
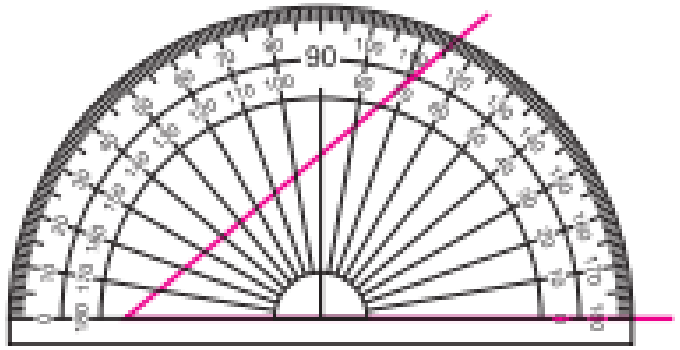


f)

Slide 7

Question 3:

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



Question 4:

a) Use a protractor to draw a 40° angle.
b) b) Do not use a protractor. Draw an angle that is 90° greater. Describe the strategy you used.
c) c) Use a protractor to check the angle in part b.

Slide 8
Question 5:

Use a ruler and a protractor.

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

- a right angle
- an acute angle
- an obtuse angle

b) For each angle in part a:

- Join the arms together to make a triangle.
- Measure and label one of the other angles.
- Without using a protractor, label the third angle with its measure.

c) Explain the strategy you used to find the measure of the third angle each time.