

Reasoning and Problem Solving

Step 3: Measuring with a Protractor 2

National Curriculum Objectives:

Mathematics Year 5: (5G4a) [Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles](#)

Mathematics Year 5: (5G4c) [Draw given angles and measure them in degrees](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Choose between 2 measurements in degrees to label 1 obtuse angle. Angles in increments of 10° .

Expected Choose between 3 measurements in degrees to label 2 obtuse angles. Angles in increments of 5° .

Greater Depth Choose between 3 measurements in degrees to label 2 similar obtuse angles. Angles in increments of 1° .

Questions 2, 5 and 8 (Reasoning)

Developing Compare 2 statements about measuring angles to decide which is correct. Includes 1 mistake. Angles in increments of 10° .

Expected Compare 2 statements about measuring angles to decide which is correct. Includes 1 mistake. Angles in increments of 5° .

Greater Depth Compare 2 statements about measuring angles to decide which is correct. Includes 2 mistakes. Angles in increments of 1° .

Questions 3, 6 and 9 (Reasoning)

Developing Use knowledge of right angles and straight lines to judge an inaccurate estimate of the measurement of an obtuse angle.

Expected Use knowledge of right angles and straight lines to judge an estimate of the measurement of an obtuse angle.

Greater Depth Use knowledge of right angles and straight lines to make an estimate of the measurement of an obtuse angle.

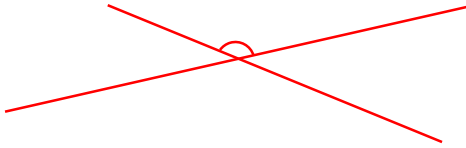
More [Year 5 Properties of Shapes](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Measuring with a Protractor 2

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1a. Choose one of the given angles to label the obtuse angle.



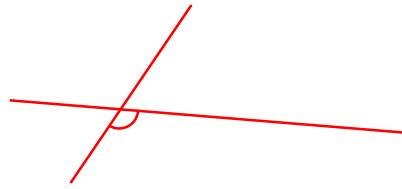
140°

100°



PS

1b. Choose one of the given angles to label the obtuse angle.



120°

160°

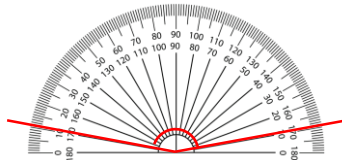


PS

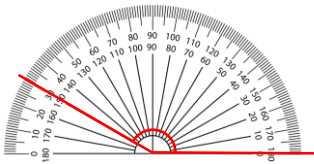
2a. Who has measured correctly? Explain why.



The angle is 170°



Mike



The angle is 150°



Cecil

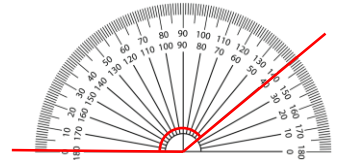


R

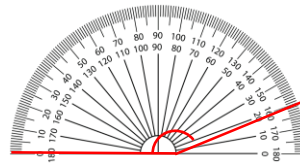
2b. Who has measured correctly? Explain why.



The angle is 140°



Toma



The angle is 160°



Susie



R

3a. Is this a good estimation? Why?



I used my knowledge of right angles to estimate that this angle is 130°

Amiya



R

3b. Is this a good estimation? Why?



I used my knowledge of straight lines to estimate that this angle is 170°

Jess

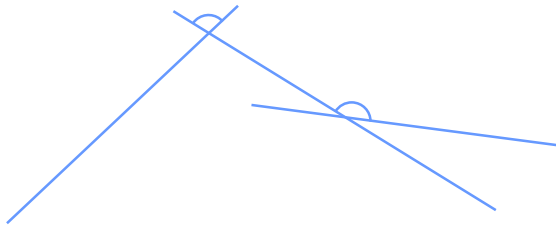


R

Measuring with a Protractor 2

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4a. Choose two of the given angles to label the obtuse angles.



70°

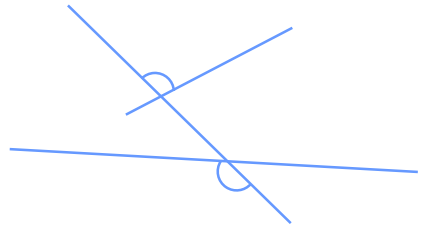
155°

105°



PS

4b. Choose two of the given angles to label the obtuse angles.



110°

140°

180°

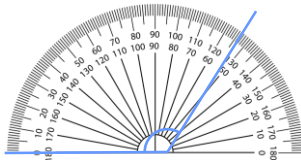


PS

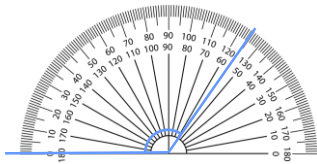
5a. Who has measured correctly? Explain why.



The angle is 125°



Azul



The angle is 125°



Celia

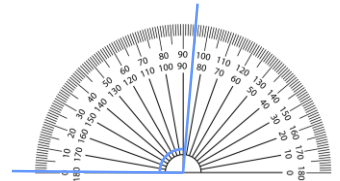


R

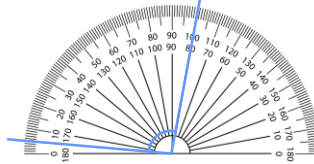
5b. Who has measured correctly? Explain why.



The angle is 95°



Karla



The angle is 110°



Tom



R

6a. Is this a good estimation? Why?



Tim

I used my knowledge of right angles to estimate that this angle is 135°



R

6b. Is this a good estimation? Why?



Meg

I used my knowledge of straight lines to estimate that this angle is 100°

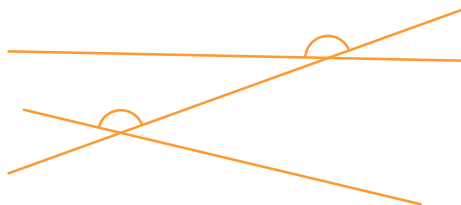


R

Measuring with a Protractor 2

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7a. Choose two of the given angles to label the obtuse angles.



147°

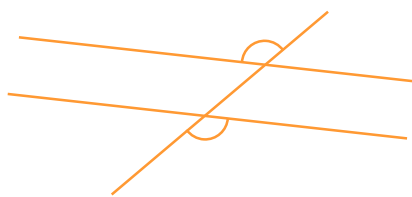
159°

173°



PS

7b. Choose two of the given angles to label the obtuse angles.



134°

113°

134°

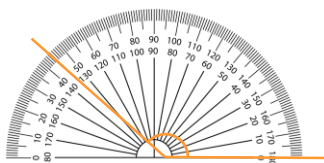


PS

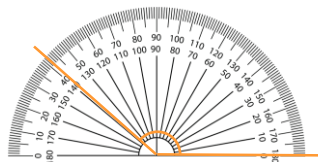
8a. Who has measured correctly? Explain why.



The angle is 45°



Mike



The angle is 138°



Rose

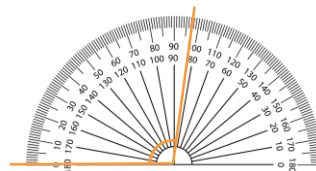


R

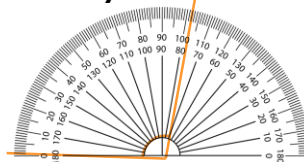
8b. Who has measured correctly? Explain why.



The angle is 98°



Amiya



The angle is 80°



Jess



R

9a. Is this a good estimation? Why?



I used my knowledge of right angles to estimate that this angle is 110°

Quincy



R

9b. Is this a good estimation? Why?



I used my knowledge of straight lines to estimate that this angle is 183°

Karla

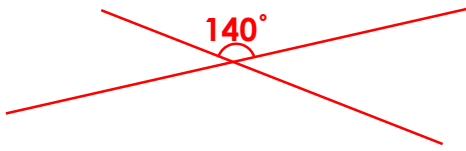


R

Reasoning and Problem Solving Measuring with a Protractor 2

Developing

1a.

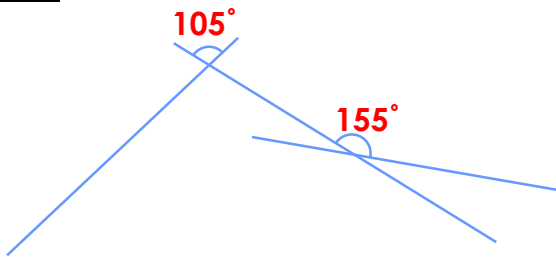


2a. Cecil is correct. The angle is placed correctly on the 0 line.

3a. No. 120° is too far away from 90°

Expected

4a.

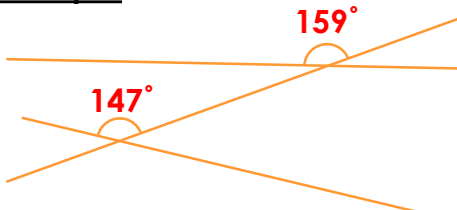


5a. Celia is correct. The corner of the angle is in the centre of the protractor.

6a. Yes. The line is in the middle of 90° and 180° .

Greater Depth

7a.



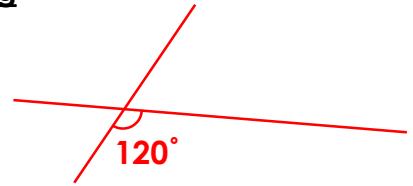
8a. Rose is correct. The corner of the angle is in the centre of the protractor and she has used the inner scale.

9a. Yes. 110° is close enough to 90° .

Reasoning and Problem Solving Measuring with a Protractor 2

Developing

1b.

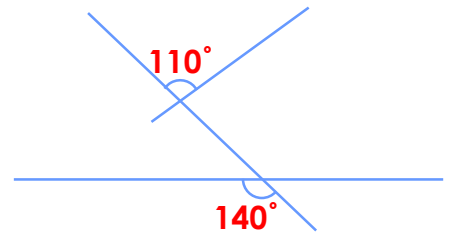


2b. Tomas is correct. The corner of the angle is in the centre of the protractor.

3b. Yes. 170° is close enough to 180° .

Expected

4b.

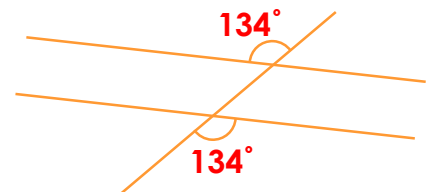


5b. Karla is correct. The angle is placed correctly on the 0 line.

6b. No. 100° is closer to 90° than 180° .

Greater Depth

7b.



8b. Amiya is correct. The angle is placed correctly on the 0 line and she has used the outer scale.

9b. No. 183° is a larger angle than 180° .