Angles on a Straight Line	**Angles on a Straight Line**

1a. James is measuring angles on a straight line.
He says:

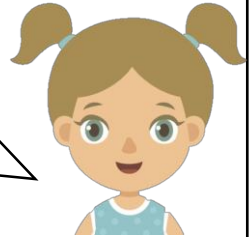> There are two angles on the line. One is 110° and the other is 60°.

Could he be right? Explain how you know.

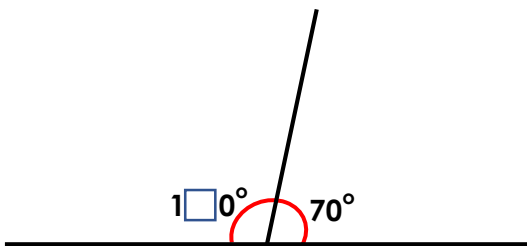**1b.** Harper is measuring angles on a straight line.
She says:

> There are two angles on the line. One is 100 ° and the other is 80°.
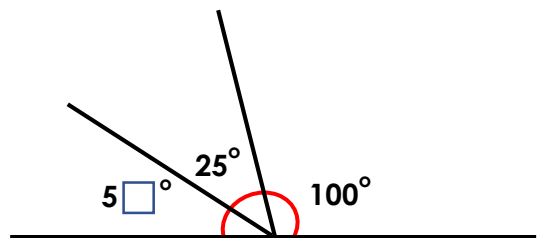
Could she be right? Explain how you know.

2a. One of the angles below has lost a digit. What should the missing digit be?
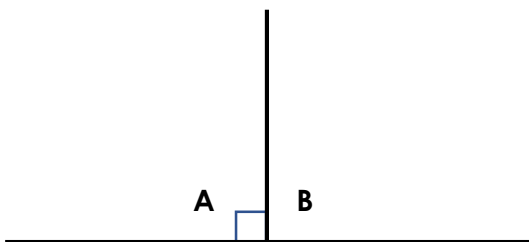
1☐0°   70°

Angles not drawn to scale

2b. One of the angles below has lost a digit. What should the missing digit be?

25°
5☐°   100°
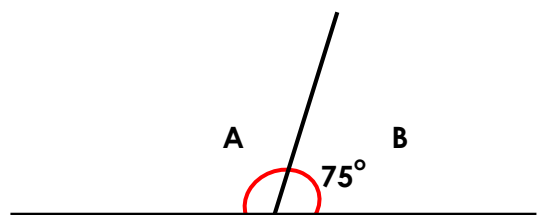
Angles not drawn to scale

3a. John says angle B is the same as angle A. Do you agree? Explain your answer.

A   B

Angles not drawn to scale

3b. Theresa says that angle A is the same as angle B. Do you agree. Explain your answer.

A   B
75°

Angles not drawn to scale

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Reasoning and Problem Solving – Angles on a Straight Line – Year 5 Developing

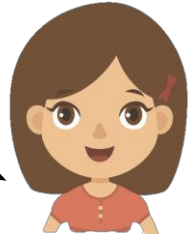**4a.** Tyler is measuring angles on a straight line.
He says:

> There are three angles on the line. One is 110°, one is 10° and the other is 60°.

Could he be right? Explain how you know.

⭐ E

R

4b. Isabelle is measuring angles on a straight line.
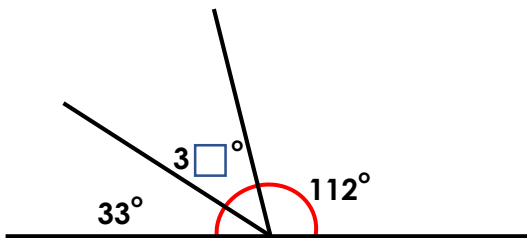She says:

> There are three angles on the line. One is 100°, one is 30° and the other is 55°.
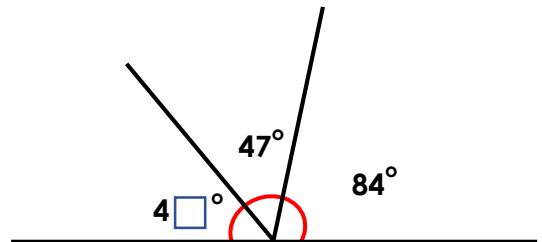
Could she be right? Explain how you know.

⭐ E

R

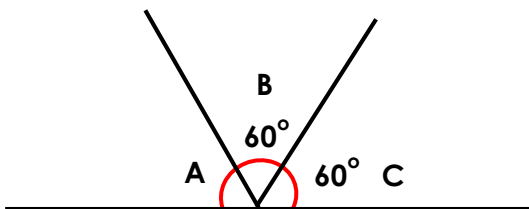**5a.** One of the angles below has lost a digit. What should the missing digit be?

3▢°

33°

112°

⭐ E

Angles not drawn to scale

PS

5b. One of the angles below has lost a digit. What should the missing digit be?

47°

4▢°

84°

⭐ E

Angles not drawn to scale

PS

6a. Jim says that angle A is the same as angle B and C. Do you agree? Explain your answer.

B
60°
A   60° C

⭐ E

Angles not drawn to scale

R

6b. Jen says that angle C is the same as angle A. Do you agree? Explain your answer.

B
106°
A   38°   C

⭐ E

Angles not drawn to scale

R

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Reasoning and Problem Solving – Angles on a Straight Line – Year 5 Expected
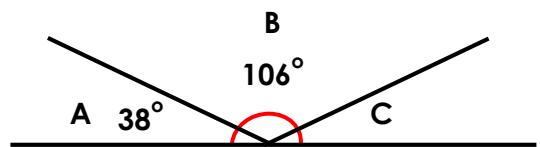
Angles on a Straight Line

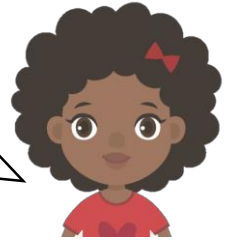**7a.** Eryk is measuring angles on a straight line.
He says:
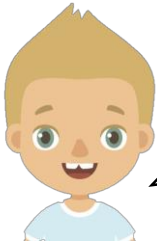
> There are three angles on a line. One is 19°, one is a right angle and the other is 61°.

Could he be right? Explain how you know.

⭐GD

R

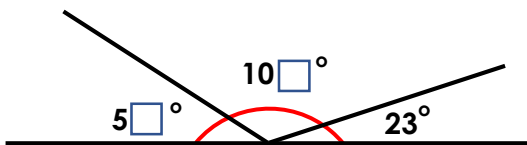**7b.** Kristi is measuring angles on a straight line.
She says:

> There are three angles on the line. One is 89° degrees, one is a right angle and the other is 1°.

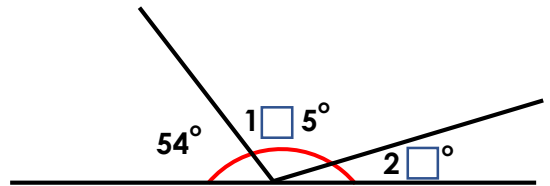Could she be right? Explain how you know.

⭐GD

R

8a. Two of the angles below have lost a digit. What should the missing digits be?

10□°

5□°   23°

⭐GD

Angles not drawn to scale   PS

8b. Two of the angles below have lost a digit. What should the missing digits be?

1□5°

54°   2□°

⭐GD

Angles not drawn to scale   PS

9a. Pam says that angle A and B are the same as angle C if each angle is equal. Do you agree? Explain your answer.

B
One third of 180°

A   60° C

⭐GD
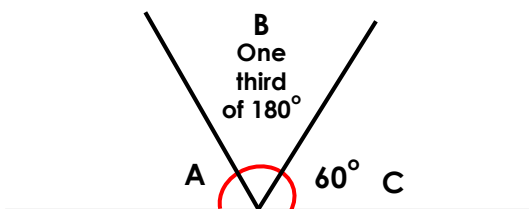
Angles not drawn to scale   R

9b. Tim says that angle B is the same as angle C. Do you agree? Explain your answer.

B

A   Half of a right angle   67° C

⭐GD

Angles not drawn to scale   R

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Reasoning and Problem Solving – Angles on a Straight Line – Year 5 Greater Depth
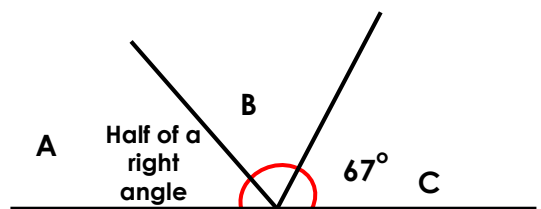
Reasoning and Problem Solving
Angles on a Straight Line

Developing
1a. James cannot be right as his angles only total 170°.

2a. The missing digit is a 1.

3a. John is correct as both angles A and B are 90° angles. Two 90° angles makes 180°.

Expected
4a. Tyler could be right as his angles total 180°.

5a. The missing digit is a 5.

6a. Jim is correct as $60^\circ + 60^\circ = 120^\circ$. $180^\circ - 120^\circ = 60^\circ$ which is the same as angle B and C.

Greater Depth
7a. Eryk cannot be right as his angles total 170°.

8a. The missing digits are a 4 and a 3.

9a. Pam is correct as one third of $180^\circ = 60^\circ$ so $60^\circ + 60^\circ = 120^\circ$. $180^\circ - 120^\circ = 60^\circ$ which is the same as angle C at 60°.

Developing
1b. Harper could be right as her angles total 180°.

2b. The missing digit is a 5.

3b. Theresa is incorrect as $180^\circ - 75^\circ = 105^\circ$ so angle A must be 105° which is different to angle B at 75°.

Expected
4b. Isabelle cannot be right as her angles total 185°.

5b. The missing digit is a 9.

6b. Jen is incorrect as $106^\circ + 38^\circ = 144$. $180^\circ - 144^\circ = 36^\circ$ which is different to angle A at 38°.

Greater Depth
7b. Kristi could be right as her angles total 180°.

8b. The missing digits are a 0 and a 1.

9b. Tim is incorrect as half of a right angle is 45° so $45^\circ + 67^\circ = 112^\circ$. $180^\circ - 112^\circ = 68^\circ$ which is different to angle C at 67°.

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