

Varied Fluency

Step 6: Calculating Angles around a Point

National Curriculum Objectives:

Mathematics Year 5: (5G4b) [Identify angles at a point and one whole turn \(total 360\)](#)

Differentiation:

Developing Questions to support calculating a missing angle around a point. Using 3 angles and increments of 5° .

Expected Questions to support calculating a missing angle around a point. Using up to 5 angles and increments of 1° .

Greater Depth Questions to support calculating 2 missing angles around a point. Using up to 5 angles and increments of 1° . Some angles are labelled with degrees and clues given to calculate missing angles.

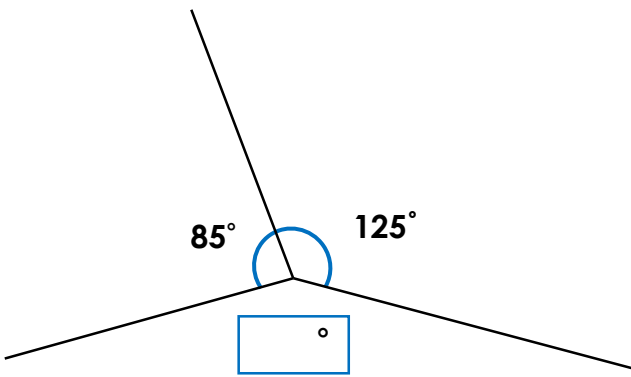
More [Year 5 Properties of Shapes](#) resources.

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Calculating Angles around a Point

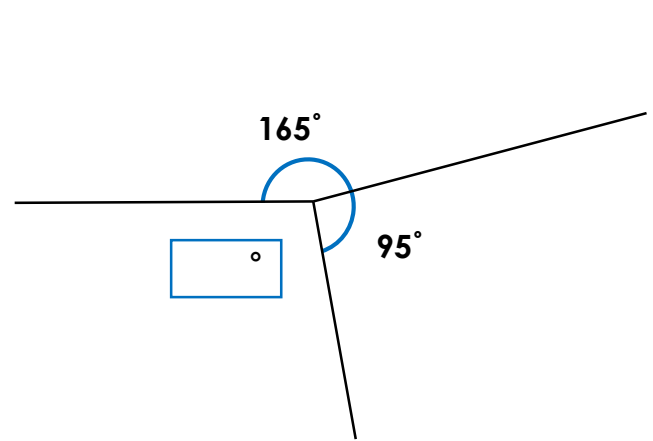
Calculating Angles around a Point

1a. What is the missing angle?



VF

1b. What is the missing angle?



VF

2a. Three angles make up a full turn.
These are 2 of the angles:

75°
 155°

What is the value of the third angle?



VF

2b. Three angles make up a full turn.
These are 2 of the angles:

80°
 165°

What is the value of the third angle?



VF

3a. Circle 3 angles that will add up to
make a full turn.

125° 175°
 60° 75°



VF

3b. Circle 3 angles that will add up to
make a full turn.

115° 55°
 85° 160°



VF

4a.

A third of a full turn is 120°

True or false?



VF

4b.

A quarter of a full turn is 45°

True or false?

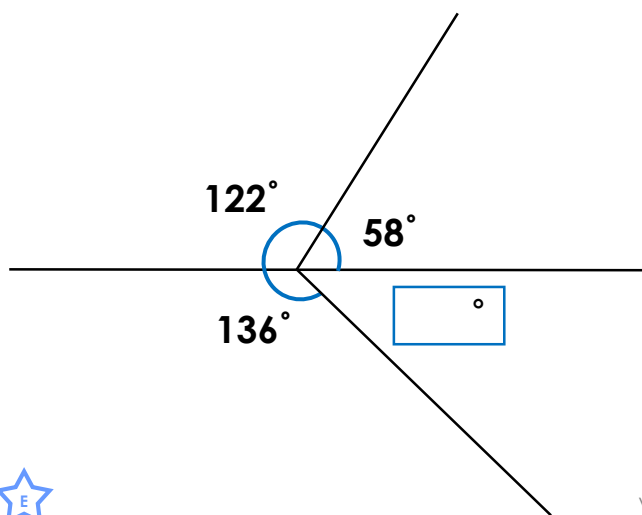


VF

Calculating Angles around a Point

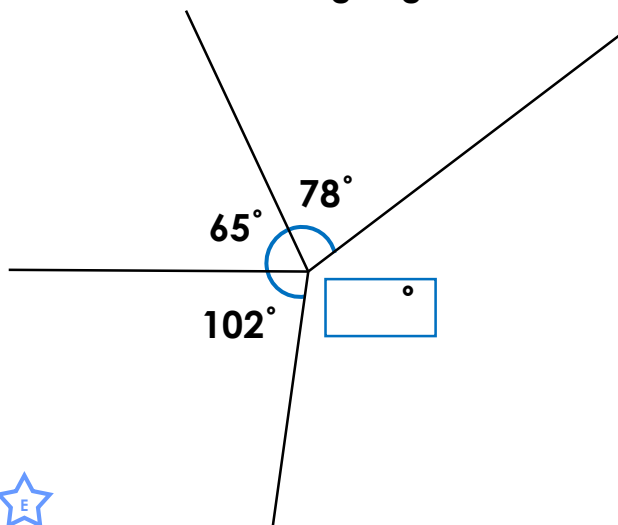
Calculating Angles around a Point

5a. What is the missing angle?



VF

5b. What is the missing angle?



VF

6a. Four angles make up a full turn. These are 3 of the angles:

28°
 143°
 92°

What is the value of the fourth angle?



VF

6b. Four angles make up a full turn. These are 3 of the angles:

36°
 178°
 67°

What is the value of the fourth angle?



VF

7a. Circle 4 angles that will add up to make a full turn.

32°

69°

112°

53°

101°

78°



VF

7b. Circle 4 angles that will add up to make a full turn.

81°

59°

136°

22°

84°

78°



VF

8a.

A sixth of a full turn is 66°

True or false?



VF

8b.

An eighth of a full turn is 45°

True or false?

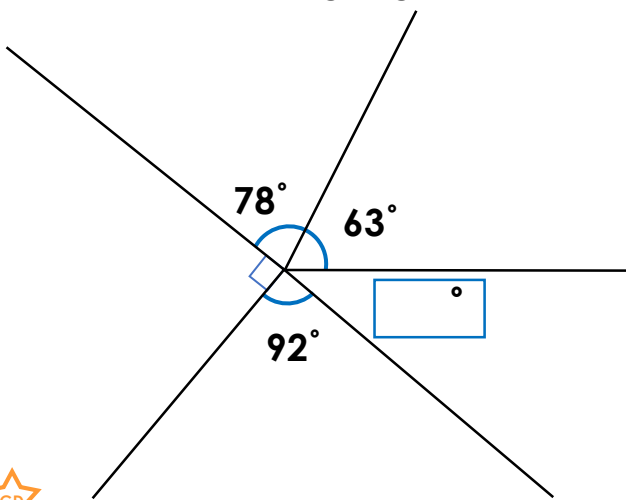


VF

Calculating Angles around a Point

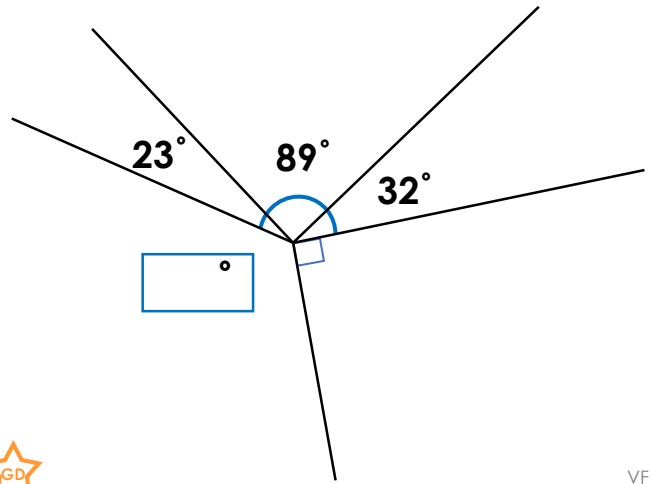
Calculating Angles around a Point

9a. What is the missing angle?



VF

9b. What is the missing angle?



VF

10a. Five angles make up a full turn. These are 4 of the angles:

54°
13°
93°
64°

What is the value of the fifth angle?



VF

10b. Five angles make up a full turn. These are 4 of the angles:

54°
66°
124°
71°

What is the value of the fifth angle?



VF

11a. Circle 5 angles that will add up to make a full turn.

42° 36° 89°

32° 98° 95°



VF

11b. Circle 5 angles that will add up to make a full turn.

104° 19° 83°

98° 22° 56°



VF

12a. Three-ninths of a full turn is 120°
True or false?



VF

12b. Five-eighths of a full turn is 200°
True or false?



VF

Varied Fluency

Calculating Angles around a Point

Developing

- 1a. 150°
2a. 130°
3a. 60° 125° 175°
4a. True

Expected

- 5a. 44°
6a. 97°
7a. 69° 78° 101° 112°
8a. False, it is 60° .

Greater Depth

- 9a. 37°
10a. 136°
11a. 36° 42° 89° 95° 98°
12a. True

Varied Fluency

Calculating Angles around a Point

Developing

- 1b. 100°
2b. 115°
3b. 85° 115° 160°
4b. False, it is 90° .

Expected

- 5b. 115°
6b. 79°
7b. 59° 81° 84° 136°
8b. True

Greater Depth

- 9b. 126°
10b. 45°
11b. 19° 56° 83° 98° 104°
12b. False, it is 225°