Varied Fluency
Step 4: Vertically Opposite Angles

National Curriculum Objectives:

Mathematics Year 6: (6G4b) Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Differentiation:

Developing Questions to support their understanding that vertically opposite angles are equal. Includes 4 angles measured to the nearest 10 degrees.

Expected Questions to support their understanding that vertically opposite angles are equal. Includes 4 angles measured to the nearest whole degree; up to 2 angles given per question.

Greater Depth Questions to support their understanding that vertically opposite angles are equal. Includes up to 6 angles measured to the nearest whole degree; up to 2 angles given per question.

More Year 6 Properties of Shapes resources.

Did you like this resource? Don't forget to review it on our website.

Vertically Opposite Angles

1a. Calculate the missing angles.

a =

b =

120°

60°

a

b

*Not to scale*

VF

D

1b. Calculate the missing angles.
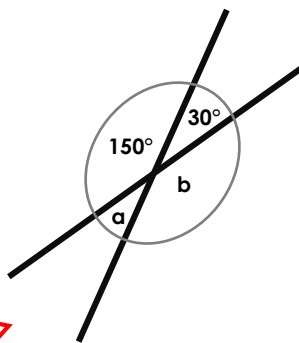
a =

b =

30°

150°

b

a

Not to scale

VF

D

2a. Complete the statement.

130°

50°

a

b

a + b =

Not to scale

VF

D
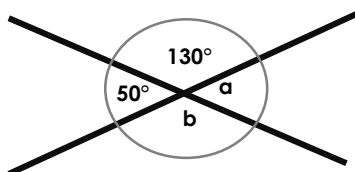
2b. Complete the statement.

80°

a

100°

b

80° + 100° + a + b =

Not to scale

VF

D
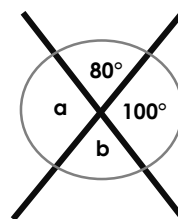
3a. Which angles total 180°?

120°

60°

60°

120°

Not to scale

VF

D
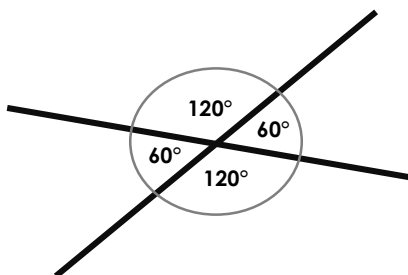
3b. Which angles total 360°?

110°

70°

70°

110°

Not to scale

VF

D
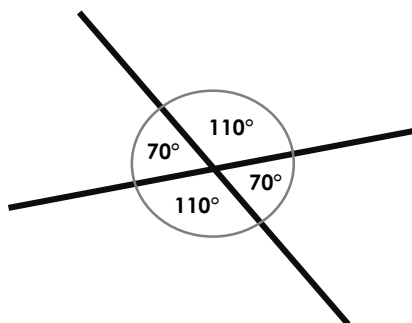
4a. You have drawn 2 straight lines that cross each other. 1 set of vertically opposite angles measure 80° each.

What is the size of the other vertically opposite angles?

VF

D

4b. You have drawn 2 straight lines that cross each other. 1 set of vertically opposite angles measure 110° each.

What is the size of the other vertically opposite angles?

VF

D

Vertically Opposite Angles

5a. Calculate the missing angles.

a

124°   b

56°

a = ☐

b = ☐
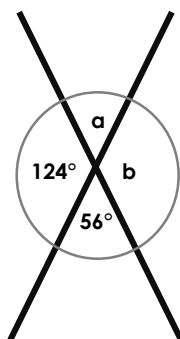
E   *Not to scale*   VF

5b. Calculate the missing angles.

86°

a   94°

b

a = ☐

b = ☐

E   *Not to scale*   VF

6a. Complete the statement.
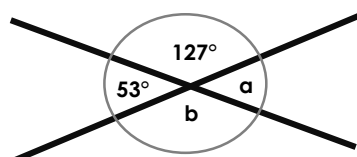
127°

53°   a

b

a + b = ☐

E   *Not to scale*   VF

6b. Complete the statement.

96°

a   84°

b

96° + 84° + a + b = ☐

E   *Not to scale*   VF

7a. Which angles total 180°?

118°

62°   62°

118°
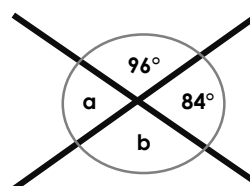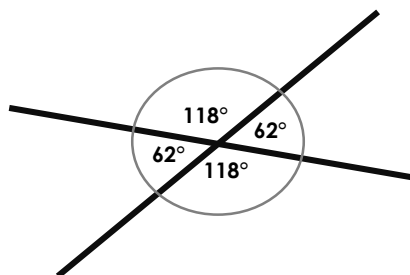
E   *Not to scale*   VF

7b. Which angles total 360°?

76°   104°

104°   76°
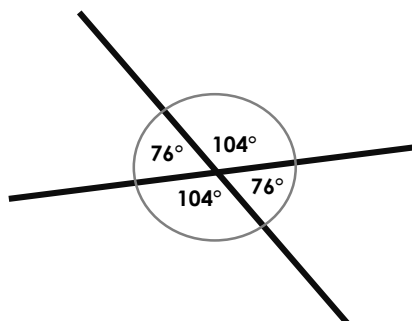
E   *Not to scale*   VF

8a. You have drawn 2 straight lines that cross each other. 1 set of vertically opposite angles measure 92° each.

**What is the size of the other vertically opposite angles?**

E   VF

8b. You have drawn 2 straight lines that cross each other. 1 set of vertically opposite angles measure 124° each.

What is the size of the other vertically opposite angles?

E   VF

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Varied Fluency – Vertically Opposite Angles – Year 6 Expected

Vertically Opposite Angles

Vertically Opposite Angles

9a. Calculate the missing angles.

54°
b   c
52°   74°
a
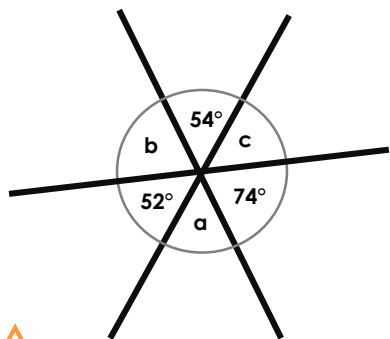
a =
b =
c =

Not to scale   VF

9b. Calculate the missing angles.

89°   c
b   68°
23°   a
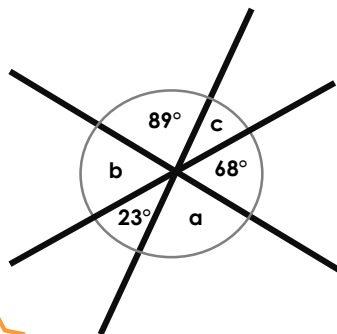
a =
b =
c =

Not to scale   VF

10a. Complete the statement.

52°   84°
44°   a
c   b
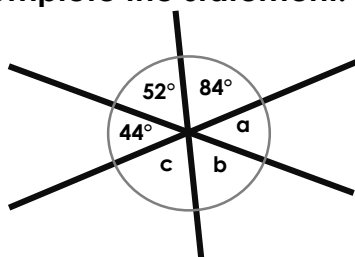
a + b + c =

Not to scale   VF

10b. Complete the statement.

a   64°
87°   c
b   29°
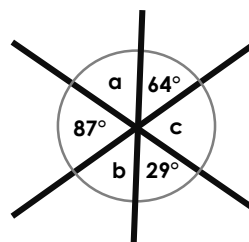
87° + 64° + 29° + a + b + c =

Not to scale   VF

11a. Which angles total 180°?

123°
16°   41°
41°   16°
123°
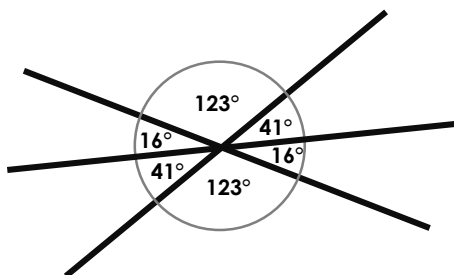
Not to scale   VF

11b. Which angles total 360°?

42°   92°
46°   46°
92°   42°
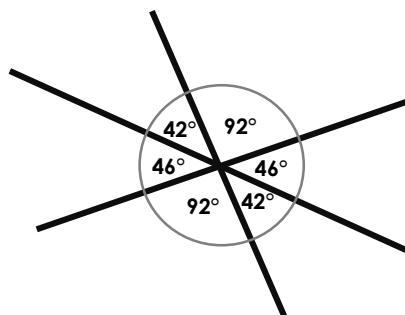
Not to scale   VF

12a. You have drawn 3 straight lines that cross each other. 1 set of vertically opposite angles measure 108° each. Another set measures 43° each.

What is the size of the 3rd set of vertically opposite angles?

VF

12b. You have drawn 3 straight lines that cross each other. 1 set of vertically opposite angles measure 94° each. Another set measures 37° each.

What is the size of the 3rd set of vertically opposite angles?

VF

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Varied Fluency – Vertically Opposite Angles – Year 6 Greater Depth

Varied Fluency
Vertically Opposite Angles

Developing
1a. a = 60°, b = 120°
2a. 180°
3a. 60° + 120°= 180°
4a. 100°

Expected
5a. a = 56°, b = 124°
6a. 180°
7a. 62° + 118° = 180°
8a. 88°

Greater Depth
9a. a = 54°, b = 74°, c = 52°
10a. 180°
11a. 123° + 16°+ 41°= 180°
12a. 29°

Varied Fluency
Vertically Opposite Angles

Developing
1b. a = 30°, b = 150°
2b. 360°
3b. 70° + 70° + 110° + 110° = 360°
4b. 70°

Expected
5b. a = 94°, b = 86°
6b. 360°
7b. 76° + 76° + 104° + 104° = 360°
8b. 56°

Greater Depth
9b. a = 89°, b = 68°, c = 23°
10b. 360°
11b. 92° + 92° + 42° + 42° + 46° + 46° = 360°
12b. 49°