Working on Geometry basics

Walt Calculate angles around a point and angles on a straight line:

Success Criteria-

Angles around a point:

- I can identify and label the angles around a point.
- I can calculate the sum of the angles around a point.
- I can use the sum of the angles around a point to find the missing angle.

Angles on a straight line:

- I can identify and label the angles on a straight line.
- I can calculate the sum of the angles on a straight line.
- I can use the sum of the angles on a straight line to find the missing angle.

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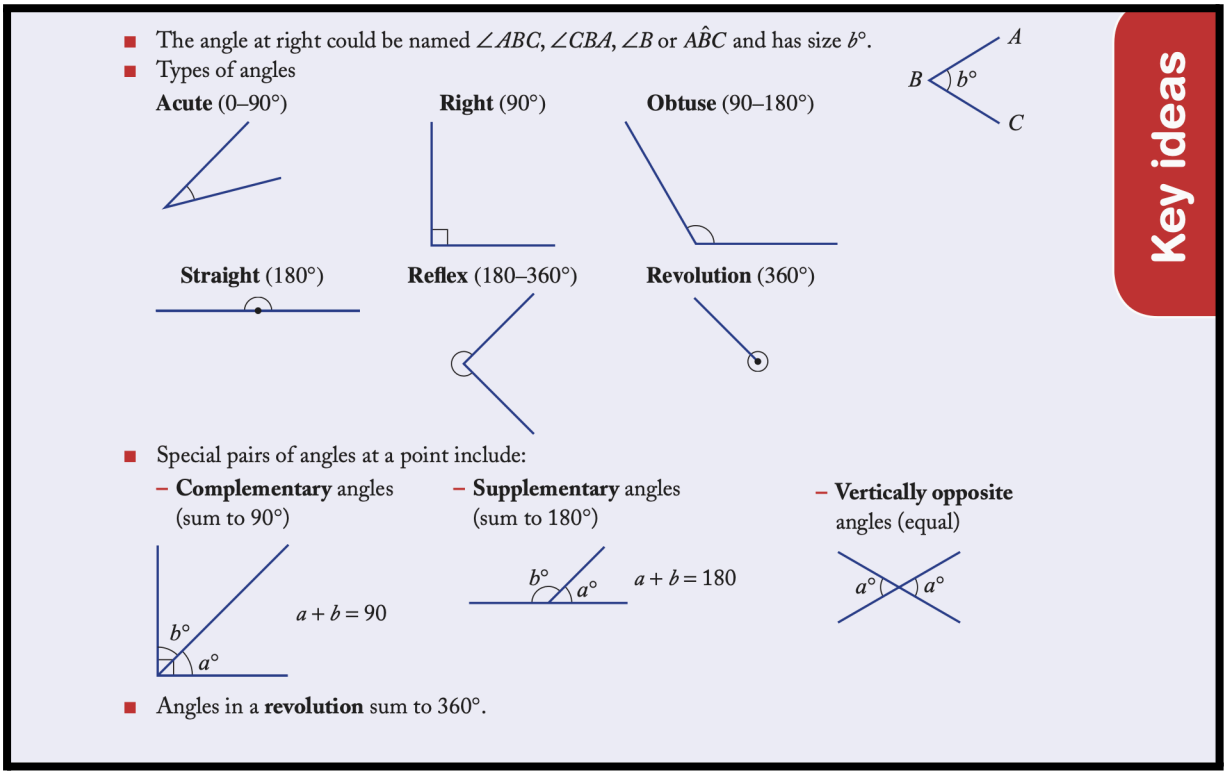
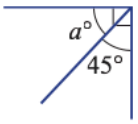


,?

[How to solve -Video on Angles around a point and angles on a straight line]

6 State the value of the pronumeral (letter) in these diagrams.

a



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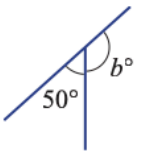

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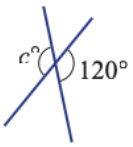

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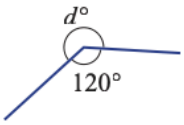

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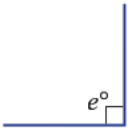

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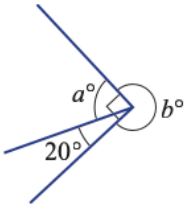
7 Determine the unknown angles marked in these diagrams.

a



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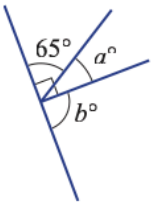

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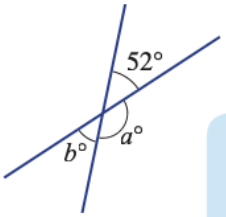

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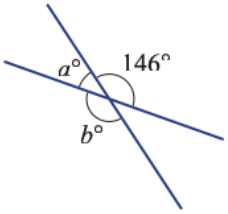

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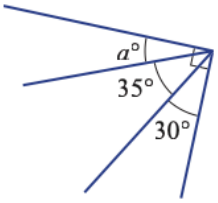

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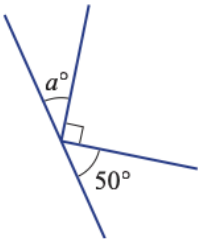

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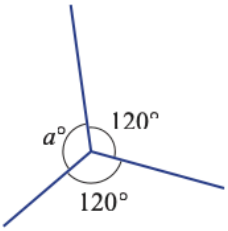

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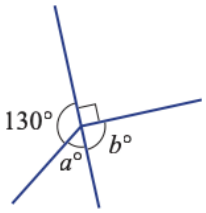

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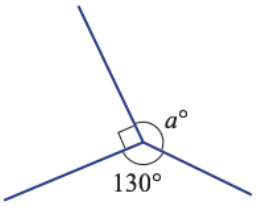


Angles in a right angle add to 90°. Angles on a straight line add to 180°. Angles in a revolution add to 360°.

8 Give the compass bearing, in degrees, for these directions.

a West (W)	**b** East (E)	**c** North (N)	**d** South (S)
e NW	**f** SE	**g** SW	**h** NE

Solve the following word problem

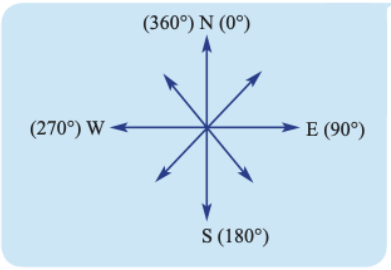
Problem-solving and Reasoning

9 A round birthday cake is cut into sectors for nine friends (including Jack) at Jack's birthday party. After the cake is cut there is no cake remaining. What will be the angle at the centre of the cake for Jack's piece if:

- **a** everyone receives an equal share?
- **b** Jack receives twice as much as everyone else? (In parts **b**, **c** and **d** assume his friends have equal shares of the rest.)
- **c** Jack receives four times as much as everyone else?
- **d** Jack receives ten times as much as everyone else?

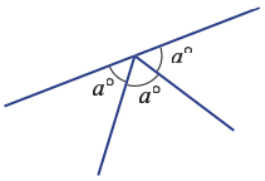
10 In which direction (e.g. north–east or NE) would you be walking if you were headed on these compass bearings?

a 180°
b 360°
c 270°
d 90°
e 45°
f 315°
g 225°
h 135°



11 Find the value of the pronumerals in these diagrams.

a



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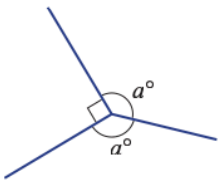

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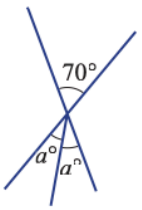

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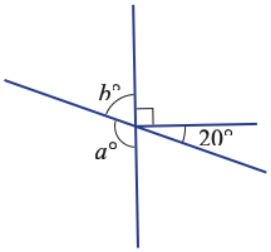

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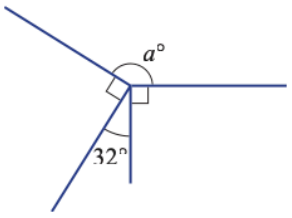

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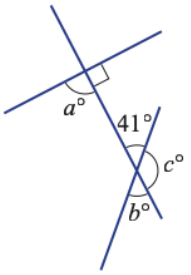
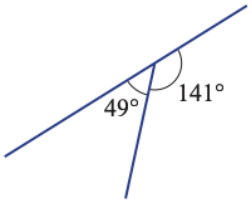


12 Explain, with reasons, what is wrong with these diagrams.

a



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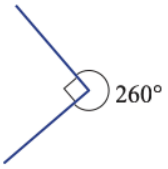

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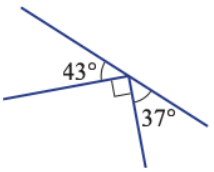

Check your answers

c $\angle AOB$ (or $\angle EOD$)

6 **a** 45 **b** 130 **c** 120
d 240 **e** 90 **f** 180

7 **a** $a = 70, b = 270$ **b** $a = 25, b = 90$
c $a = 128, b = 52$ **d** $a = 34, b = 146$
e $a = 25$ **f** $a = 40$
g $a = 120$ **h** $a = 50, b = 90$
i $a = 140$

8 **a** 270° **b** 90° **c** 0° (or 360°) **d** 180°
e 315° **f** 135° **g** 225° **h** 45°

9 **a** 40° **b** 72° **c** 120° **d** 200°

10 **a** S **b** N **c** W **d** E
e NE **f** NW **g** SW **h** SE

11 **a** 60 **b** 135 **c** 35
d $a = 110, b = 70$ **e** $a = 148$
f $a = 90, b = 41, c = 139$

12 **a** Supplementary angles should add to 180°.
b Angles in a revolution should add to 360°.
c Angles on straight line should add to 180°.