**11** Alex's distance from home is represented by the equation $D = -0.5t + 300$, where $D$ represents his distance from home, in kilometres, and $t$ represents time, in minutes.

How long will it take Alex to reach a distance of 182 km from home?

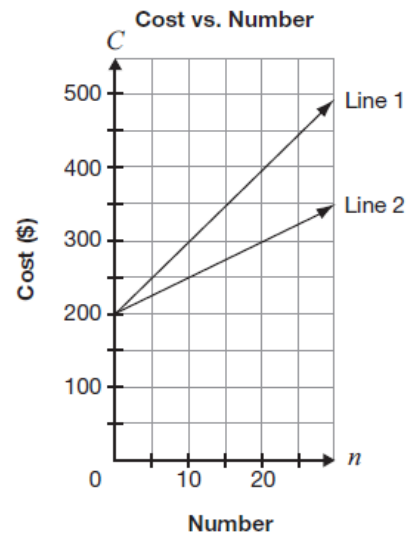a  236 minutes

b  209 minutes

c  64 minutes

d  59 minutes

$$182 \overset{-300}{=} -0.5t \overset{-300}{+} 300$$

$$\frac{-118}{-0.5} = \frac{-0.5t}{-0.5}$$

$$t = 236$$

**12** Two lines are shown below.

**Cost vs. Number**


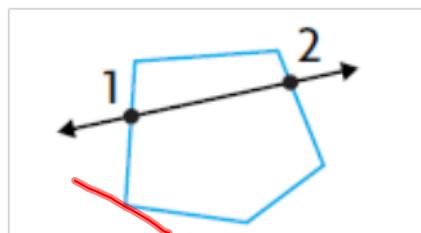
Which of the following describes a difference between Line 1 and Line 2?

a  Line 2 has a larger initial cost.

b  Line 1 has a larger initial cost.

c  Line 2 has a greater rate of change.

d  Line 1 has a greater rate of change.
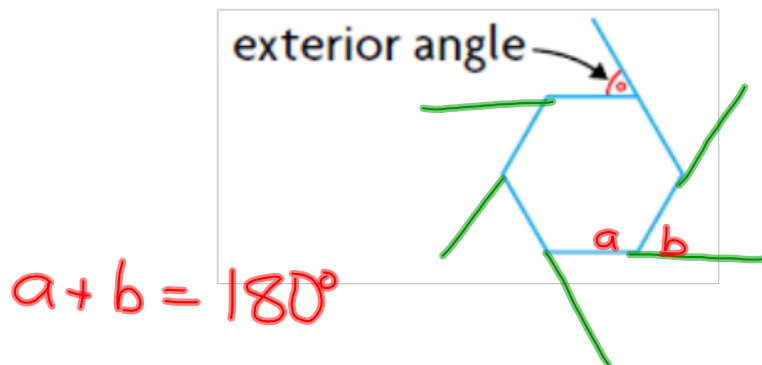
## 7.2 - Angle Properties of Polygons

<u>Convex Polygon</u> - A polygon with every interior angle less than 180°; any straight line through it crosses, at most, two sides.

<u>Concave Polygon</u> - A polygon with at least one interior angle greater than 180°; a straight line through it may cross more than two sides.
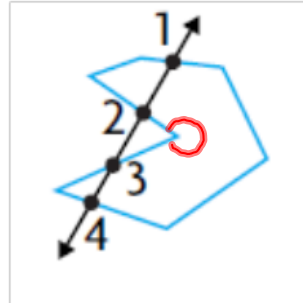
<u>Exterior Angle</u> - The angle formed by extending a side of a convex polygon.

$$a + b = 180°$$

# Key Ideas

1. The sum of the exterior angles of any regular convex polygon is 360°.

2. An exterior angle and its adjacent interior angle are supplementary; they add up to 180°.

**Example One**

What is the sum of the exterior angles in a regular octagon? What is the measure of each exterior angle in a regular octagon?

The exterior angles of any regular polygon, including octagons, adds up to 360°.

$x = ?$

octagon

$x$
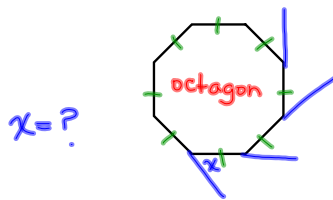
Each Exterior Angle $= \dfrac{360°}{\# \text{ of sides}}$

$= \dfrac{360}{8}$

$= 45°$

## Example Two

What is the measure of each exterior angle in a regular 11-gon?

11-gon

Each Exterior Angle = $\dfrac{360}{11}$

$= 32.72°$

## Example Three

Determine the measure of <CBA.
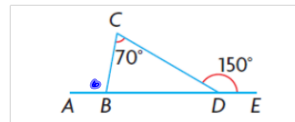
C 70° 150°
A  B       D  E

1. Calculate $\angle CDB$.

$180° - 150° = \angle CDB$

$30° = \angle CDB$

2. Calculate $\angle CBD$

$\angle CBD = 180 - 70 - 30$

$= 80°$

3. Calculate $\angle CBA$.

$\angle CBA = 180 - 80$

$= 100°$

**Complete**:  p. 394 - 395 #1 - 3, 5, 7, 8.

d)
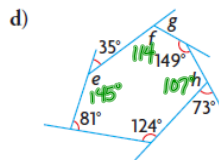
$e° = 180 - 35$
   $= 145°$

$h° = 180 - 73°$
   $= 107°$

Sum of
Interior Angles $= (n-2) \times 180$
$= (6-2) \times 180$
$= 720°$

$f° = 720 - 149 - 107 - 124 - 81 - 145$
   $= 114°$

$g° = 180 - 114°$
   $= 66°$