



# CAMI Mathematics: Grade 10

## GRADE 10 CAPS Curriculum

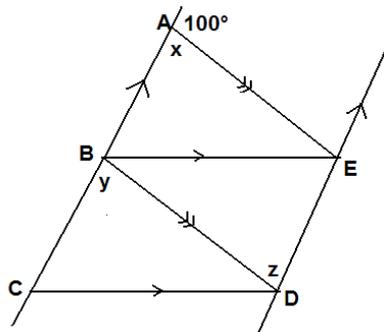
### 10.7 Euclidean Geometry - Angles

#### 1.1 Complete the following geometric facts.

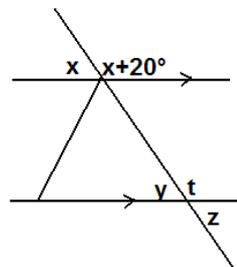
- (a) Angles around a point add up to .....°
- (b) The sum of all the adjacent angles on one side of a straight line is .....°
- (c) Two angles that add up to  $180^\circ$  are called ..... angles.
- (d) Two angles that add up to  $90^\circ$  are called ..... angles.
- (e) When two lines intersect, the vertically opposite angles are .....
- (f) For parallel lines:
  - Corresponding angles are .....
  - Co-interior angles .....
  - Alternate angles are .....

#### 1.2 Solve the following problems by using the geometric facts given in 1.1.

- (a) Calculate the value of  $x$ ,  $y$  and  $z$ .



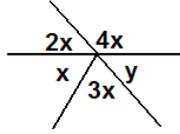
- (b) Calculate the values of  $x$ ,  $y$ ,  $z$  and  $t$ .



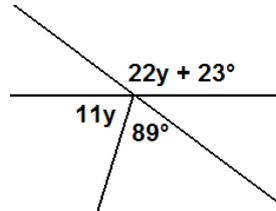


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(c) Calculate the value of all the angles represented in the sketch.



(d) Calculate the value of  $y$ .





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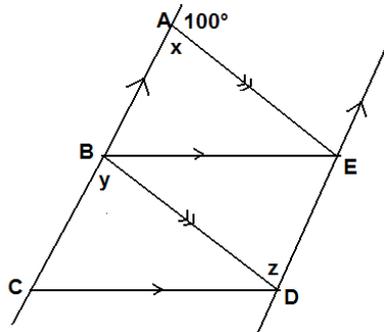
## MEMO

### 1.1 Complete the following geometric facts.

- Angles around a point add up to  **$360^\circ$** .
- The sum of all the adjacent angles on one side of a straight line is  **$180^\circ$** .
- Two angles that add up to  $180^\circ$  are called **supplementary** angles.
- Two angles that add up to  $90^\circ$  are called **complementary** angles.
- When two lines intersect, the vertically opposite angles are **equal**.
- For parallel lines:
  - Corresponding angles are **equal**.
  - Co-interior angles **add up to  $180^\circ$** .
  - Alternate angles are **equal**.

### 1.2 Solve the following problems by using the geometric facts given in 1.1. [8.2.1.1; 8.2.2.2; 8.2.2.1; 8.2.3.1; 8.2.3.2; 8.2.4.1; 8.2.4.2; 8.2.5.1; 8.2.5.2]

- (a) Calculate the value of  $x$ ,  $y$  and  $z$ .

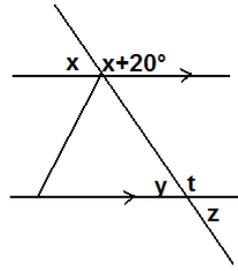


$$\begin{aligned}x + 100^\circ &= 180^\circ && \text{(Suppl } \angle\text{'s)} \\x &= 80^\circ \\y &= 80^\circ && \text{(Corresponding } \angle\text{'s)} \\z &= 80^\circ && \text{(Alternate } \angle\text{'s)}\end{aligned}$$

- (b) Calculate the values of  $x$ ,  $y$ ,  $z$  and  $t$ .

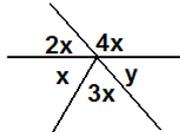


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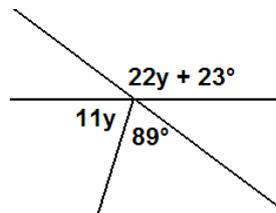
$$\begin{aligned}x + x + 20^\circ &= 180^\circ \quad (\text{Suppl } \angle\text{'s}) \\2x + 20^\circ &= 180^\circ \\2x &= 160^\circ \\x &= 80^\circ \\y &= 80^\circ \quad (\text{Corresponding } \angle\text{'s}) \\z &= 80^\circ \quad (\text{Vertically opp}) \\t &= 100^\circ \quad (\text{Suppl } \angle\text{'s})\end{aligned}$$

(c) Calculate the value of all the angles represented in the sketch.



$$\begin{aligned}2x + x + 3x &= 180^\circ \quad (\text{Suppl } \angle\text{'s}) \\6x &= 180^\circ \\x &= 30^\circ \\2x &= 60^\circ \\3x &= 90^\circ \\4x &= 120^\circ \\y &= 60^\circ\end{aligned}$$

(d) Calculate the value of y.



$$\begin{aligned}22y + 23^\circ &= 11y + 89^\circ \quad \text{Vertically opp } \angle\text{'s} \\22y - 11y &= 89^\circ - 23^\circ \\11y &= 66^\circ \\y &= 6^\circ\end{aligned}$$