



CAMI Mathematics: Grade 10

GRADE 10 CAPS Curriculum

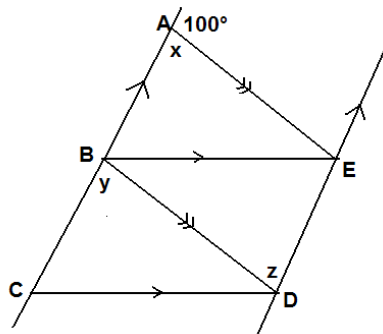
10.7 Euclidean Geometry - Angles

1.1 Complete the following geometric facts.

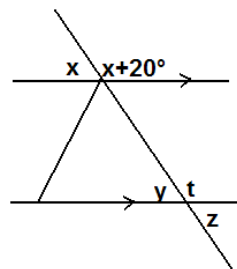
- (a) Angles around a point add up to $^{\circ}$
- (b) The sum of all the adjacent angles on one side of a straight line is $^{\circ}$
- (c) Two angles that add up to 180° are called angles.
- (d) Two angles that add up to 90° are called angles.
- (e) When two lines intersect, the vertically opposite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



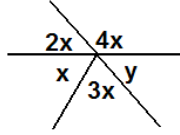
- (b) Calculate the values of x , y , z and t .



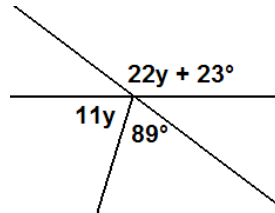


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(c) Calculate the value of all the angles represented in the sketch.



(d) Calculate the value of y .





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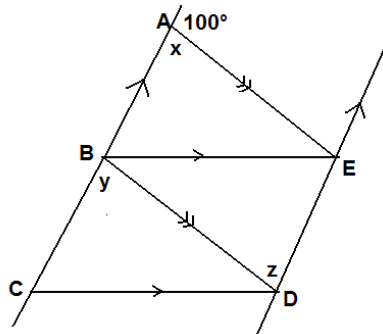
MEMO

1.1 Complete the following geometric facts.

- Angles around a point add up to **360°** .
- The sum of all the adjacent angles on one side of a straight line is **180°** .
- Two angles that add up to 180° are called **supplementary** angles.
- Two angles that add up to 90° 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°** .
 - 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 .

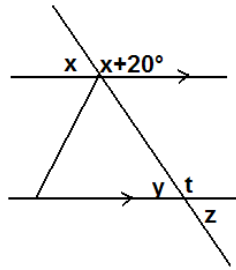


$$\begin{aligned}x + 100^\circ &= 180^\circ && \text{(Suppl } \angle\text{'s)} \\x &= 80^\circ \\y &= 80^\circ && \text{(Corresponding } \angle\text{'s)} \\z &= 80^\circ && \text{(Alternate } \angle\text{'s)}\end{aligned}$$

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

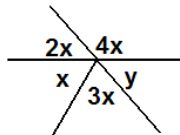


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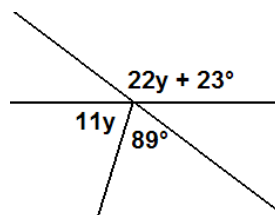
$$\begin{aligned}x + x + 20^\circ &= 180^\circ \quad (\text{Suppl } \angle\text{'s}) \\2x + 20^\circ &= 180^\circ \\2x &= 160^\circ \\x &= 80^\circ \\y &= 80^\circ \quad (\text{Corresponding } \angle\text{'s}) \\z &= 80^\circ \quad (\text{Vertically opp}) \\t &= 100^\circ \quad (\text{Suppl } \angle\text{'s})\end{aligned}$$

(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.



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