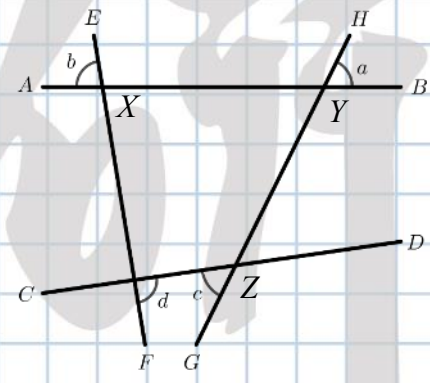


## REGULAR QUIZ 10

Form 1

Angles in rectilinear Figures

Part A – MC (20@2marks)

1.	A	$\angle TRQ = r + 15^\circ$ (vert. opp. $\angle$ s) $r + 15^\circ + 70^\circ = 120^\circ$ (ext. $\angle$ of $\Delta$ ) $r = 35^\circ$
2.	C	$\angle AOB = x - 15^\circ$ $60^\circ + x - 15^\circ + 40^\circ = 180^\circ$ (adj. $\angle$ s on st. line) $x = 95^\circ$
3.	A	Connect the points $A$ and $C$ . $\angle BAE + 305^\circ = 360^\circ$ ( $\angle$ s at a pt.) $\angle BAE = 55^\circ$ $\angle EAC + \angle ECA + 90^\circ = 180^\circ$ ( $\angle$ sum of $\Delta$ ) $\angle EAC + \angle ECA = 90^\circ$ $55^\circ + \angle EAC + \angle ECA + \angle DCE = 180^\circ$ (int. $\angle$ s, $BA \parallel DC$ ) $\angle DCE = 35^\circ$
4.	D	I is correct. Referring to the figure, $\angle BXE = 180^\circ - b = c = a = \angle BYH$ $\therefore EF \parallel GH$ (corr. $\angle$ s eq.) II is correct. $\angle DZH = c = a$ (vert. opp. $\angle$ s) $\therefore AB \parallel CD$ (corr. $\angle$ s eq.) III is correct. $c + d = 180^\circ$ (int. $\angle$ s, $EF \parallel HG$ ) 
5.	B	$\angle BCD = 80^\circ$ (corr. $\angle$ s, $AD \parallel EF$ ) $31^\circ + x = 80^\circ$ (ext. $\angle$ of $\Delta$ ) $x = 49^\circ$
6.	D	$(180^\circ - 150^\circ) + x^\circ + (180^\circ - 135^\circ) = 180^\circ$ $x = 105$
7.	C	$a = f$ and $b = c$ and $e = d$ (vert. opp. $\angle$ s) $180^\circ - a + 180^\circ - b = d$ (ext. $\angle$ of $\Delta$ ) $a + b + d = 360^\circ$ $a + b + c + d + e + f = 2(a + b + d) = 720^\circ$

8.	C	<p>Add two lines <math>XC</math> and <math>YD</math> such that <math>AB \parallel XC \parallel YD \parallel EF</math>.</p> <p>Referring to the figure,</p> $\angle ACX = p \text{ (alt. } \angle \text{s, } AB \parallel XC)$ $\angle EDY = q \text{ (alt. } \angle \text{s, } YD \parallel EF)$ $x - p + y - q = 180^\circ \text{ (int. } \angle \text{s, } XC \parallel YD)$ $x = 180^\circ + p + q - y$	
9.	D	$\angle BFG = 34^\circ \text{ (vert. opp. } \angle \text{s)}$ $\angle FBG + 34^\circ = 90^\circ \text{ (ext. } \angle \text{ of } \Delta)$ $\angle FBG = 56^\circ$ $56^\circ + 56^\circ + \angle BAC = 180^\circ \text{ (} \angle \text{ sum of } \Delta)$ $\angle BAC = 68^\circ$	
10.	B	$\angle COA + 40^\circ + 50^\circ = 180^\circ \text{ (} \angle \text{ sum of } \Delta)$ $\angle COA = 90^\circ$ $\angle BOD = 90^\circ \text{ (vert. opp. } \angle \text{s)}$ <p>Since <math>\angle BOD + \angle ODE = 180^\circ</math>, <math>AB \parallel DE</math> (int. <math>\angle</math>s supp.)</p> $\angle OBE = 180^\circ - 130^\circ = 50^\circ \text{ (int. } \angle \text{s, } AB \parallel DE)$ <p>Since <math>\angle CAB \neq \angle OBE</math>, so <math>AC</math> is not parallel to <math>EB</math>.</p>	

1. A      2. C      3. A      4. D      5. B  
6. D      7. C      8. C      9. D      10. B

**Part B – Short Questions (24 marks) (deduct 1 mark per question for not giving reasons)**

1.  $\angle CFD = 70^\circ$  (corr.  $\angle$ s,  $AB \parallel FC$ )      1M  
 $y = 78^\circ + 70^\circ$  (ext.  $\angle$  of  $\Delta$ )      1M  
 $= 148^\circ$       1A  
(3)
2. (a)  $\angle BAE + x + x = 180^\circ$  ( $\angle$  sum of  $\Delta$ )  
 $\angle BAE = 180^\circ - 2x$       1A  
(b)  $\angle FAD = 180^\circ - 2x$  ( $\angle$  sum of  $\Delta$ )      1M  
 $180^\circ - 2x + 60^\circ + 180^\circ - 2x + x = 180^\circ$  (int.  $\angle$ s,  $AB \parallel DF$ )      1M  
 $x = 80^\circ$       1A  
(4)
3. (a)  $p + 40^\circ + 80^\circ = 180^\circ$  (int.  $\angle$ s,  $AC \parallel DE$ )  
 $p = 60^\circ$       1A  
 $q = 80^\circ$  (corr.  $\angle$ s,  $CD \parallel BF$ )      1A



(b)  $\angle DBC + 40^\circ + 80^\circ = 180^\circ$  ( $\angle$  sum of  $\Delta$ )

$$\angle DBC = 60^\circ$$

$$\angle GBF + 60^\circ + 80^\circ = 180^\circ$$
 ( $\angle$  sum of  $\Delta$ )

$$\angle GBF = 40^\circ$$

1M

$$\angle BFG = \angle BGF$$
 (base  $\angle$ s, isos.  $\Delta$ )

$$2\angle BGF + 40^\circ = 180^\circ$$

$$\angle BGF = 70^\circ$$

1M

Since  $p = 60^\circ \neq \angle BGF$ ,  $GF$  is not parallel to  $DE$ .

1A

(5)

4. (a)  $\angle COE = \angle DOB$

$$y + 30^\circ = 30^\circ + \angle BOF$$

$$\angle BOE = y$$

1A

(b)  $\angle AOC = y + 30^\circ$

$$y + 30^\circ + y + 30^\circ + y = 180^\circ$$
 (adj.  $\angle$ s on st. line)

1M

$$y = 40^\circ$$

1A

(c)  $\angle AOC = 70^\circ$

1M

Since  $\angle AOC = \angle GAO$ ,

$AG \parallel CO$  (alt.  $\angle$ s equal)

1A

(5)

5. (a)  $\angle FAH = x$

$$\angle AHG = 2y$$

1M

$$x + 2y + 70^\circ = 180^\circ$$
 ( $\angle$  sum of  $\Delta$ )

$$x + 2y = 110^\circ$$

1A

(bi)  $x + 2(40^\circ) = 110^\circ$

$$x = 30^\circ$$

1M

$$\angle EAH = 60^\circ$$

$$\angle AHD = 120^\circ$$

1M

Since  $\angle EAH + \angle AHD = 180^\circ$ ,

$EA \parallel DH$  (int.  $\angle$ s supp.).

1A

(bii)  $\angle EGA + 30^\circ + 130^\circ = 180^\circ$  ( $\angle$  sum of  $\Delta$ )

$$\angle EGA = 20^\circ$$

$$\angle EGH = 20^\circ + 70^\circ = 90^\circ$$

1M

$$\therefore EG \perp HG$$

1A

(7)