

# 1. STRAIGHT LINE

## 1.1 MEDIANS

(a) 

<u>Grad</u>	<u>Point</u>
$m_{MA} = \frac{3}{5}$	$M_{BC}(2, 7)$

$$y - 7 = \frac{3}{5}(x - 2)$$

$$\underline{\underline{5y - 3x = 29}}$$

(b) 

<u>Grad</u>	<u>Point</u>
$m = \frac{5}{4}$	$M_{PR}(2, 5)$

$$y - 5 = \frac{5}{4}(x - 2)$$

$$\underline{\underline{4y - 5x = 10}}$$

(c) 

<u>Grad</u>	<u>Point</u>
$m = \frac{0}{-4}$	$M_{AB}(-1, 0)$

$$y - 0 = \frac{0}{-4}(x + 1)$$

$$4y = 0$$

$$\underline{\underline{y = 0}}$$

## 1.2 ALTITUDES

(a) 

<u>Grad</u>	<u>Point</u>
$m = \frac{2}{2}$	$(-3, 4)$
$= 1$	

$$m_1 = -1$$

$$y - 4 = -1(x + 3)$$

$$\underline{\underline{y + x = 1}}$$

(b)	<u>Grad</u>	<u>Point</u>
	$m = \frac{6}{12}$	$(-2, 0)$
	$= \frac{1}{2}$	

$$m_{\perp} = -2$$

$$y - 0 = -2(x + 2)$$

$$\underline{\underline{y + 2x = -4}}$$

(c)	<u>Grad</u>	<u>Point</u>
	$m = \frac{4}{0}$	$(3, 0)$

(grad undefined)

$$m_{\perp} = -\frac{0}{4}$$

$$y - 0 = -\frac{0}{4}(x - 3)$$

$$4y = 0$$

$$\underline{\underline{y = 0}}$$

### 1.3 PERPENDICULAR BISECTORS

(a)	<u>Grad</u>	<u>Point</u>
	$m = \frac{2}{2}$	$M(2, 7)$
	$= 1$	

$$m_{\perp} = -1$$

$$y - 7 = -1(x - 2)$$

$$\underline{\underline{y + x = 9}}$$

(b)	<u>Grad</u>	<u>Point</u>
	$m = \frac{8}{10}$	$M(3, 4)$
	$= \frac{4}{5}$	

$$m_{\perp} = -\frac{5}{4}$$

$$y - 4 = -\frac{5}{4}(x - 3)$$

$$\underline{\underline{4y + 5x = 31}}$$

(c)	<u>Grad</u>	<u>Point</u>
	$m = \frac{0}{15}$	$M(\frac{3}{2}, 1)$

$$m_{\perp} = -\frac{15}{0}$$

(grad undefined)

$$y - 1 = -\frac{15}{0}(x - \frac{3}{2})$$

$$0 = -15x + \frac{45}{2}$$

$$15x = \frac{45}{2}$$

$$30x = 45$$

$$x = \frac{45}{30}$$

$$\underline{\underline{x = \frac{3}{2}}}$$

1.4  $m = \tan \theta$

(a)  $m = \tan 45$   
 $= \underline{\underline{1}}$

(b)  $m = \frac{3}{4}$

$$\frac{3}{4} = \tan \theta$$

$$\underline{\underline{\theta = 36.87^\circ}}$$

(c)  $m = -3$

$$-3 = \tan \theta$$

$$\underline{\underline{\theta = 108.43^\circ}}$$

