

Relationships Extended Test 1

1a) $4y - 3x = 6$

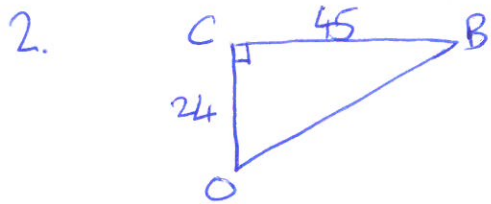
$$m = \frac{3}{4}$$

$$4y = 3x + 6$$

$$c = \frac{3}{2}$$

$$y = \frac{3}{4}x + \frac{6}{4}$$

b) $y = -\frac{1}{2}x + \frac{3}{2}$



$$BO^2 = 45^2 + 24^2$$

$$= 2601$$

$$BO = \sqrt{2601}$$

$$= 51 \text{ cm}$$

$$\text{Total wire} = 51 \times 2 = 102 \text{ cm}$$

3. $y = 2x + 1$ (1)

$$y = 4x - 3$$
 (2)

$$(2) - (1)$$

$$2x - 4 = 0$$

$$2x = 4$$

$$x = 2$$

$$(2, 5)$$

$$y = 2(2) + 1 = 5$$

4. $a = -5$

$$b = 6$$

5. $F = \frac{9}{5}C + 32$

$$F - 32 = \frac{9}{5}C$$

$$\frac{F - 32}{9/5} = C$$

$$C = \frac{5(F - 32)}{9}$$

$$2. \tan x = \frac{\sin x}{\cos x} = \frac{\frac{1}{3}}{\frac{2\sqrt{5}}{3}} = \frac{1}{3} \times \frac{3}{2\sqrt{5}} = \frac{3}{6\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{3\sqrt{5}}{30} = \frac{\sqrt{5}}{6}$$

7. a) $(+\frac{3}{4}, \frac{5}{6})$

b) ~~max~~ min tp

c) $x = +\frac{3}{4}$

3. $13\cos x + 7 = 0$

$$13\cos x = -7$$

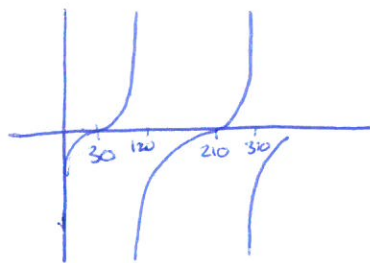
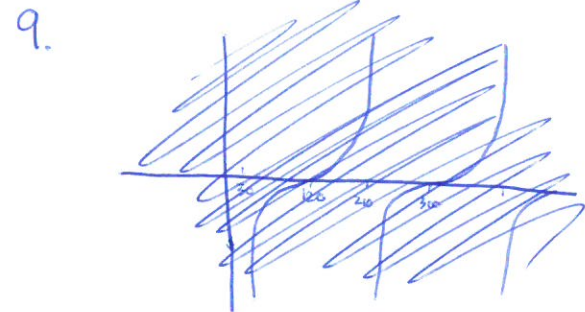
$$\cos x = \frac{-7}{13}$$

useable angle = $\cos^{-1}(\frac{7}{13}) = 57^\circ$

$$180 - 57 = 123^\circ$$

$$180 + 57 = 237^\circ$$

180-	S	A
✓		
	T	C
180+		360-
✓		



10. $a = 9$ $x = \frac{-11 \pm \sqrt{301}}{2 \times 9}$

$b = 11$

$c = -5$

$$x = \frac{-11 + \sqrt{301}}{18}$$

$$= 0.3527$$

$$= 0.4$$

$$x = \frac{-11 - \sqrt{301}}{18}$$

$$= -1.574$$

$$= -1.6$$

$$b^2 - 4ac = 11^2 - 4 \times 9 \times (-5) = 301$$