



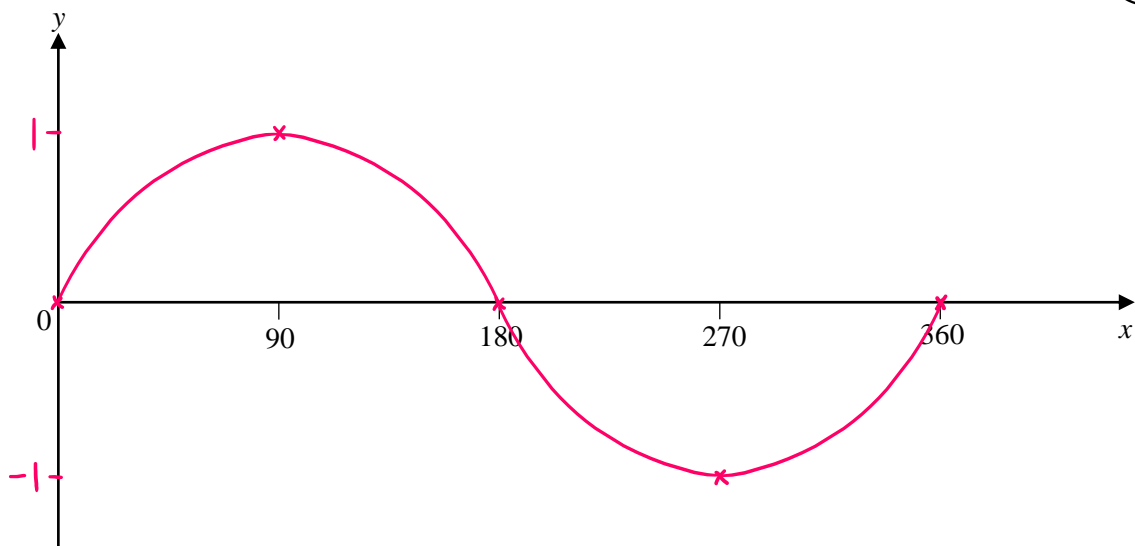
Trigonometric Graphs



REVISE THIS TOPIC

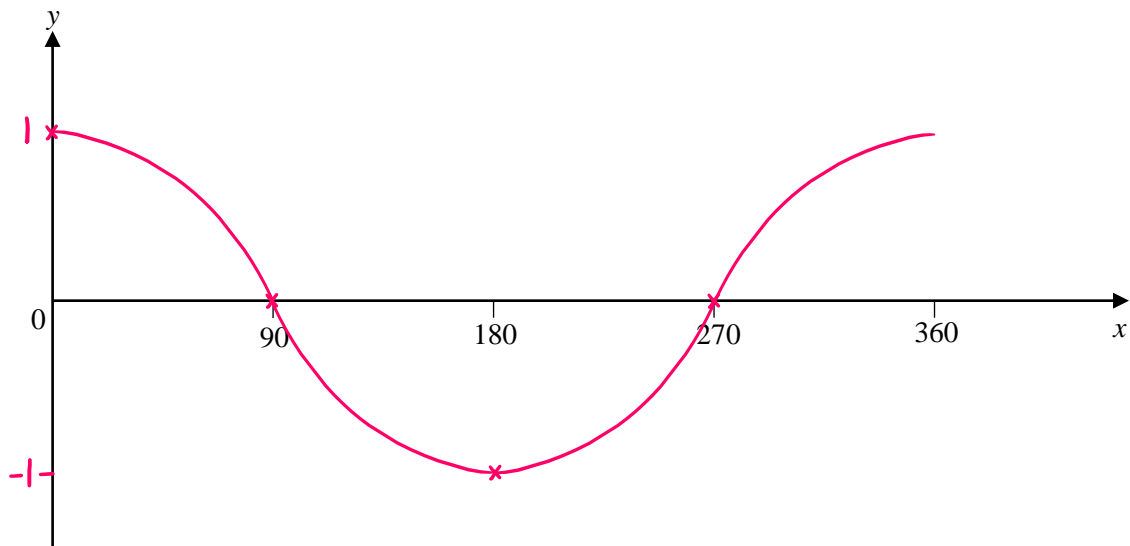


1 Sketch the graph of $y = \sin x^\circ$ for $0 \leq x \leq 360$



(Total for Question 1 is 2 marks)

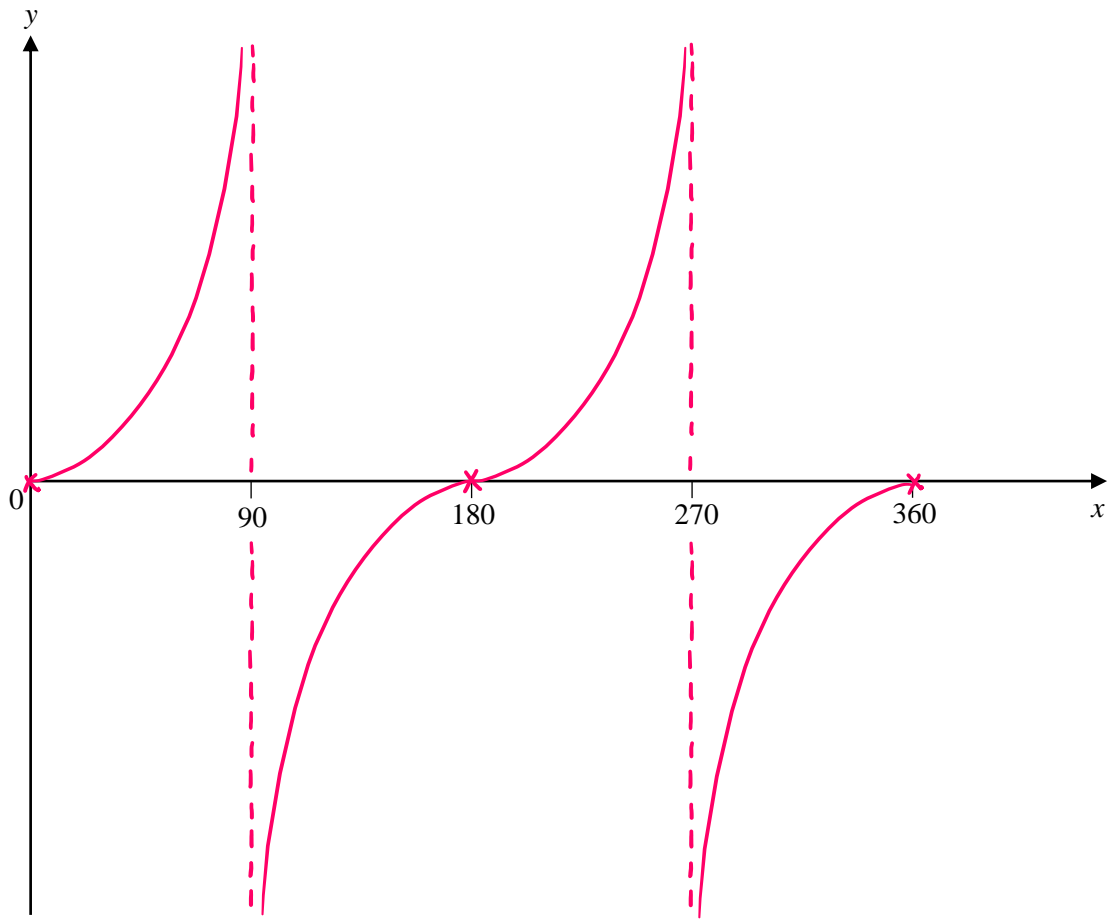
2 Sketch the graph of $y = \cos x^\circ$ for $0 \leq x \leq 360$



(Total for Question 2 is 2 marks)



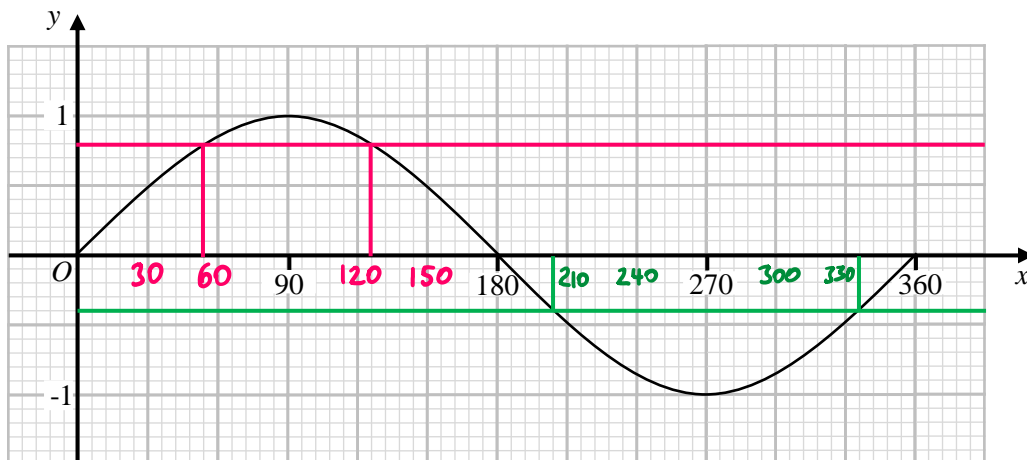
3 Sketch the graph of $y = \tan x^\circ$ for $0 \leq x \leq 360$



(Total for Question 3 is 2 marks)



4 Here is a graph of $y = \sin x^\circ$ for $0 \leq x \leq 360$



(a) Use the graph to find estimates for the solutions of

$$\sin x^\circ = 0.8 \quad \text{for } 0 \leq x \leq 360$$

54° and 126°

(2)

(b) Use the graph to find estimates for the solutions of

$$\sin x^\circ = -0.4 \quad \text{for } 0 \leq x \leq 360$$

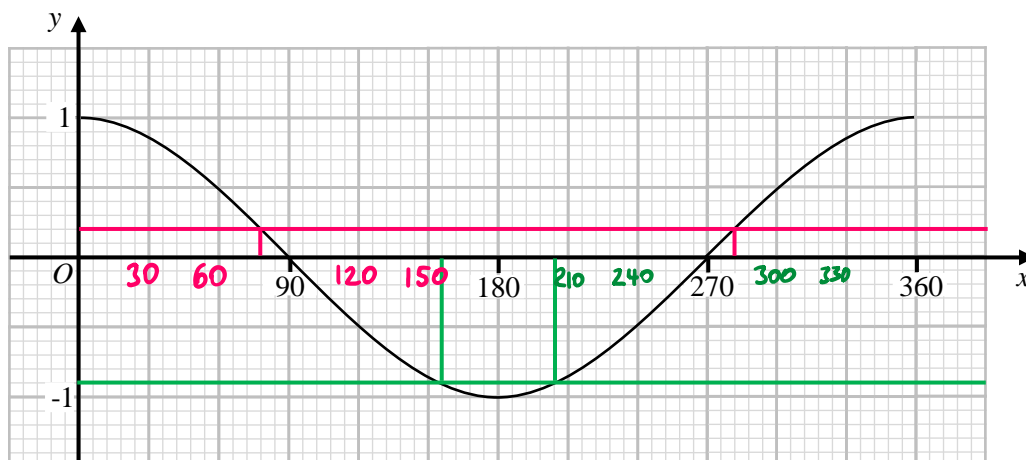
204° and 336°

(2)

(Total for Question 4 is 4 marks)



5 Here is a graph of $y = \cos x^\circ$ for $0 \leq x \leq 360$



(a) Use the graph to find estimates for the solutions of

$$\cos x^\circ = 0.2 \quad \text{for} \quad 0 \leq x \leq 360$$

78° and 282°

(2)

(b) Use the graph to find estimates for the solutions of

$$\cos x^\circ = -0.9 \quad \text{for} \quad 0 \leq x \leq 360$$

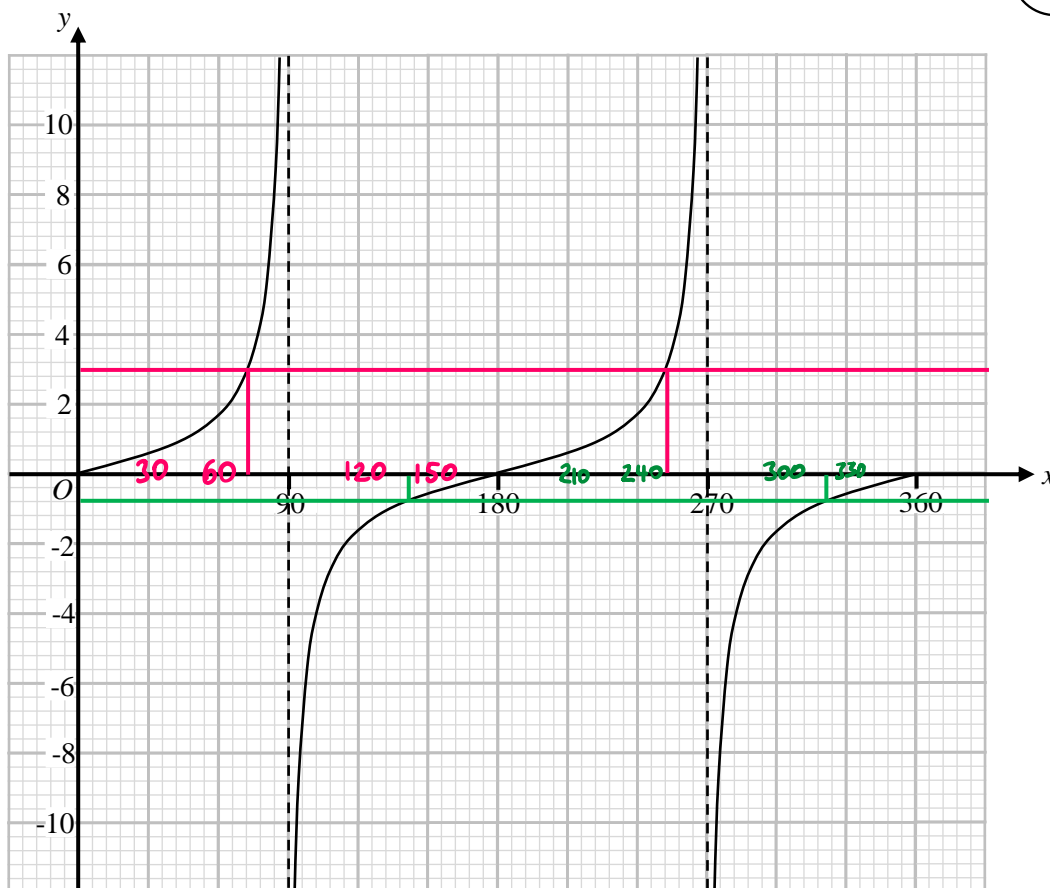
156° and 204°

(2)

(Total for Question 5 is 4 marks)



6 Here is a graph of $y = \tan x^\circ$ for $0 \leq x \leq 360$



(a) Use the graph to find estimates for the solutions of

$$\tan x^\circ = 3 \quad \text{for } 0 \leq x \leq 360$$

72° and 252°

(2)

(b) Use the graph to find estimates for the solutions of

$$\tan x^\circ = -0.8 \quad \text{for } 0 \leq x \leq 360$$

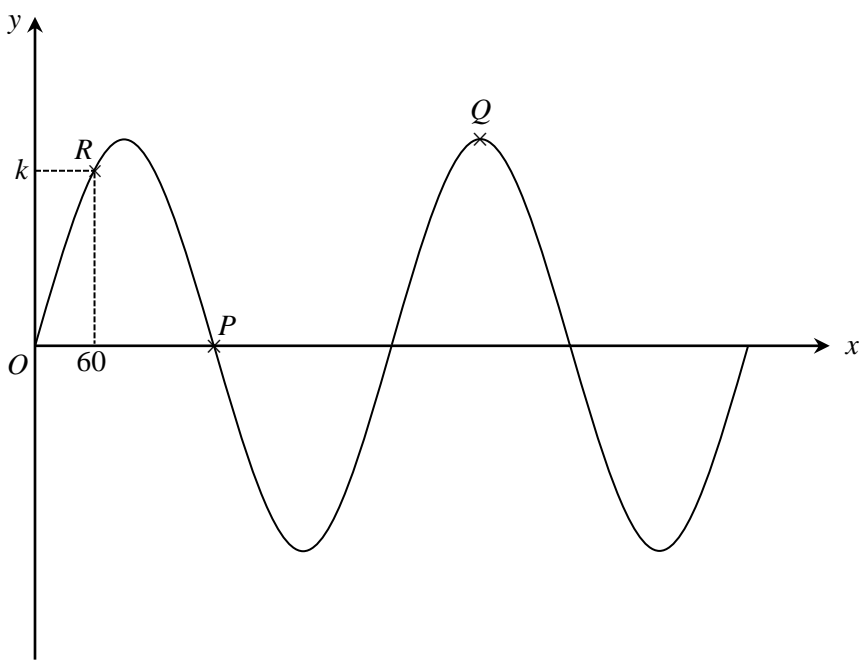
14° and 321°

(2)

(Total for Question 6 is 4 marks)



7



The diagram shows a sketch of part of the curve with equation $y = \sin x^\circ$
 Q is a maximum point on the curve.
 The coordinates of point R are $(60, k)$

(a) Write down the coordinates of point P .

(b) Write down the coordinates of point Q .

$(\underline{180}, \underline{0})$
 (1)

(c) Write down the exact value of k .

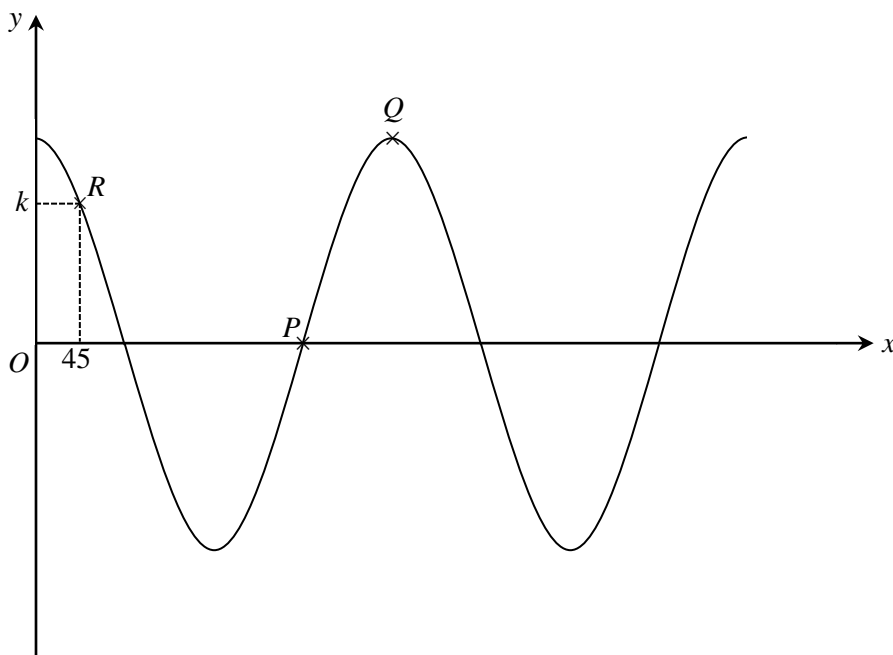
$(\underline{450}, \underline{1})$
 (1)

$k = \underline{\frac{\sqrt{3}}{2}}$
 (1)

(Total for Question 7 is 3 marks)



8



The diagram shows a sketch of part of the curve with equation $y = \cos x^\circ$
 Q is a maximum point on the curve.
 The coordinates of point R are $(45, k)$

(a) Write down the coordinates of point P .

(b) Write down the coordinates of point Q .

(270, 0)
(1)

(c) Write down the exact value of k .

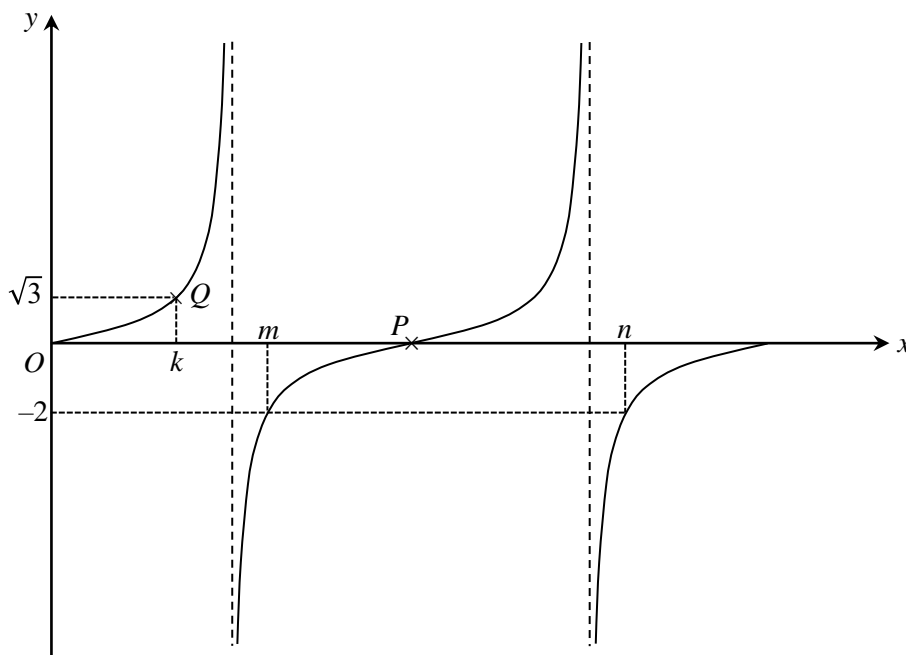
(360, 1)
(1)

$k = \frac{\sqrt{2}}{2}$
(1)

(Total for Question 8 is 3 marks)



9



The diagram shows a sketch of part of the curve with equation $y = \tan x^\circ$

The coordinates of point Q are $(k, \sqrt{3})$

$0 < m < 360$, $0 < n < 360$ and $m < n$

(a) Write down the coordinates of point P .

$(180, 0)$
(1)

(b) Write down the value of k .

$k = 60$
(1)

$\tan m^\circ = \tan n^\circ = -2$

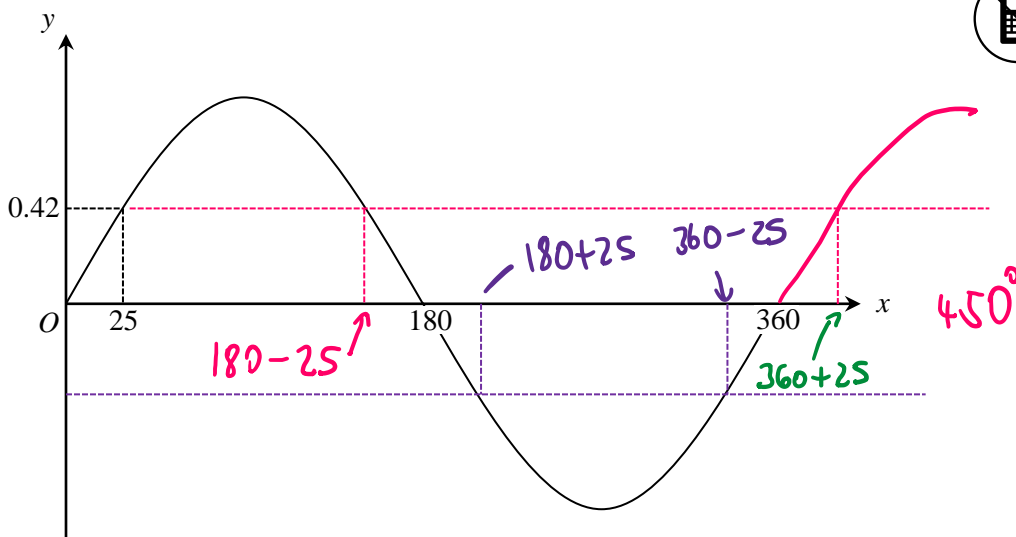
(c) Express n in terms of m .

$n = m + 180$
(1)

(Total for Question 9 is 3 marks)



10



The diagram shows a sketch of part of the curve with equation $y = \sin x^\circ$

$\sin(25^\circ) = 0.42$ (to 2 decimal places)

$\sin(p^\circ) = \sin(q^\circ) = \sin(25^\circ)$ where $90^\circ < p < 180^\circ$ and $360^\circ < q < 450^\circ$

(a) Write down the value of p

$p = \underline{\hspace{2cm} 155 \hspace{2cm}}$
(1)

(b) Write down the value of q

$q = \underline{\hspace{2cm} 385 \hspace{2cm}}$
(1)

$\sin(a^\circ) = \sin(b^\circ) = -0.42$ where $a < b$ and $180^\circ < a < 360^\circ$ and $180^\circ < b < 360^\circ$

(c) Write down the values of a and b .

$a = \underline{\hspace{2cm} 205 \hspace{2cm}}$
(1)

$b = \underline{\hspace{2cm} 335 \hspace{2cm}}$
(1)

(Total for Question 10 is 4 marks)

