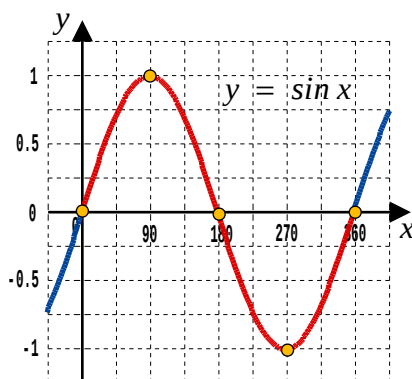


8.2 Answers

Additional Mathematics A-Level Pure Mathematics : Year 1 Trigonometry IV

Answer 1

(a)



[2, 1, 1 marks]

(b) 204.6° , 335.4°

[4 marks]

Answer 2

(a) $\sin x = \frac{\sqrt{5}}{3}$

(b) $\tan x = \frac{\sqrt{5}}{2}$

[3, 3 marks]

Answer 3

18.4° , 161.6° , 198.4° , 341.6°

Answer 4

60° , 120° , 240° , 300°

[5, 5 marks]

Answer 5

(a)

$$\begin{aligned} 5 \cos^2 x + 16 \sin x - 8 &= 0 \\ 5(1 - \sin^2 x) + 16 \sin x - 8 &= 0 \\ 5 - 5 \sin^2 x + 16 \sin x - 8 &= 0 \\ 5 \sin^2 x - 16 \sin x + 3 &= 0 \end{aligned}$$

[3 marks]

(b) 11.5° , 168.5° , 371.5° , 528.5°

[6 marks]

Answer 6

71.6° , 135° , 251.6° , 315°

Answer 7

0° , 41.4° , 180° , 318.6° , 360°

[6, 6 marks]

Answer 8

$$\begin{aligned}\text{LHS} &= \tan^2 x \times \cos^2 x + \cos^2 x - 1 \\&= \left(\frac{b}{a}\right)^2 \left(\frac{a}{c}\right)^2 + \left(\frac{a}{c}\right)^2 - 1 \\&= \frac{b^2 \times a^2}{a^2 \times c^2} + \frac{a^2}{c^2} - 1 \\&= \frac{b^2}{c^2} + \frac{a^2}{c^2} - 1 \\&= \frac{b^2 + a^2}{c^2} - 1 \\&= \frac{c^2}{c^2} - 1 \\&= 1 - 1 \\&= 0 \\&= \text{RHS} \quad \square\end{aligned}$$

[5 marks]