

PURE MATHS PAPER 1-3

$$\textcircled{1} \quad \frac{22}{5} - \frac{10}{7} = \frac{154 - 50}{35} = \frac{104}{35} = 2 \frac{34}{35}$$

$$\textcircled{2} \quad T.C = C.P + VAT$$

$$47 = C.P + \frac{6}{100} \times C.P$$

$$47 = C.P + 0.06 C.P = 1.06 C.P$$

$$C.P = \frac{47}{1.06} = 44.34$$

$$VAT = 47 - 44.34 = \text{£}2.66$$

$$\textcircled{3} \quad 5 + 2^3 \times 2$$

$$5 + 8 \times 2 = 5 + 16$$

$$= \underline{\underline{21}}$$

$$\textcircled{4} \quad \sqrt{9 \times 10} = \sqrt{9} \times \sqrt{10} = 3\sqrt{10}$$

$$\textcircled{5} \quad \frac{4a^2}{t^3}$$

$$\textcircled{6} \quad 6ac + 10ad - 3bc - 5bd$$

$$\textcircled{7} \quad \begin{array}{ccccccc} & 1 & 4 & 6 & 4 & 1 & \\ \hline \end{array}$$

$$1(2a)^4 b^0 + 4(2a)^3 b^1 + 6(2a)^2 b^2 + 4(2a) b^3 + (2a)^0 b^4$$

$$16a^4 + 32a^3 b + 24a^2 b^2 + 8ab^3 + b^4$$

⑧

$$m(2n+5) = n+3$$

$$2mn + 5m = n + 3$$

$$2mn - n = 3 - 5m$$

$$n(2m-1) = 3-5m$$

$$n = \frac{3-5m}{2m-1}$$

⑨

$$(x-4)(x+3)$$

⑩

$$3x^2 - 6x + 4x - 8$$

$$3x(x-2) + 4(x-2)$$

$$(3x+4)(x-2).$$

⑪

$$AC^2 = 100$$

$$AB^2 + BC^2 = 9 + 25 = 34$$

$$(34 < 100)$$

It is an Obtuse angle

⑫

$$\tan 32 = \frac{x}{5}$$

$$x = 5 \tan 32 = 3.12$$

$$\therefore \text{tower height} = 1.72 + 3.12 \\ = 4.84 \text{ m}$$

⑬

$$360^\circ = 2\pi \text{ rad}$$

$$35^\circ \neq x \text{ rad}$$

$$x = \frac{2\pi(35)}{360} = 0.61 \text{ rad}$$

$$\textcircled{6} \quad 360^\circ = 2\pi \text{ rad}$$

$$x \stackrel{x}{=} 1.8 \text{ rad}$$

$$x = \frac{360 \times 1.8}{2\pi} = 103.1^\circ$$

$$\textcircled{13} \quad \theta = \tan^{-1}(0.9004)$$

$$\theta = 42^\circ$$

$$\theta_1 = 42$$

$$\theta_2 = 180 + 42 = 222$$

$$\textcircled{14} \quad a^2 = 10^2 + 5^2 - 2(10)(5)\cos 120$$

$$a^2 = 125 + 50 = 175$$

$$a = 13.23$$