Mathematics
Credit Level
Model Paper based on 2000 Exam
Paper 1 (Non-calculator)

1. 15·5

2. $\frac{1}{6}$

3. -24

4. (*a*) $(x-4)(x+4)$

(*b*) $\dfrac{5(2x-3)}{(2x-3)(2x+3)} = \dfrac{5}{2x+3}$

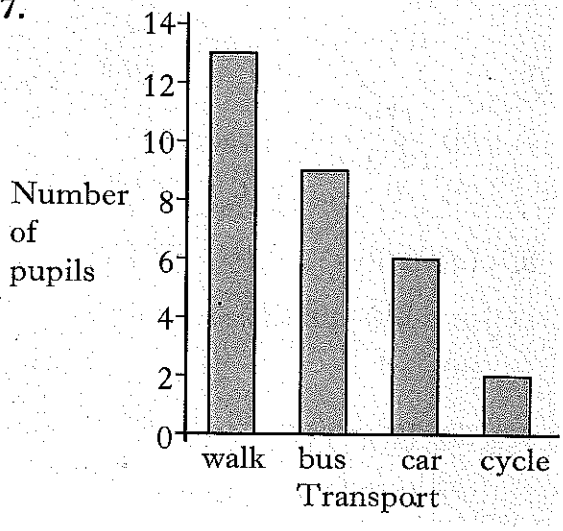
5. (*a*) $\frac{24}{50} = \frac{12}{25}$

(*b*) $\frac{11}{50}$

(*c*) $\frac{8}{50} = \frac{4}{25}$

6. $y = a + b$

7.



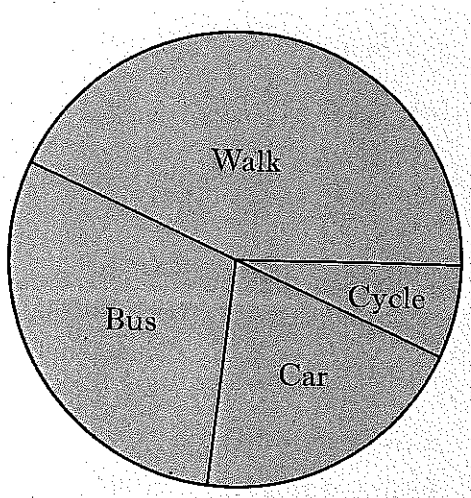
OR

Walk: $\frac{13}{30} \times 360 = 156°$

Bus: $\frac{9}{30} \times 360 = 108°$

Car: $\frac{6}{30} \times 360 = 72°$

Cycle: $\frac{2}{30} \times 360 = 24°$



8. $y < -1$

9. (*a*) $a^{\frac{3}{2}} + \dfrac{1}{a^{\frac{1}{2}}}$ **OR** $a^{\frac{3}{2}} + a^{-\frac{1}{2}}$

(*b*) $2\sqrt{2}$

10. $V = \frac{3}{4}t + 5$

11. (*a*) $7 = 4^2 - 3^2$

(*b*) $19 = 10^2 - 9^2$

(*c*) nth odd number $= n^2 - (n-1)^2$

$= 2n - 1$

Paper 2

1. 3410

2. $0{\cdot}0236 = 2{\cdot}36 \times 10^{-2}$

3. $x = 1{\cdot}2, -4{\cdot}2$

4. $\bar{x} = 158{\cdot}2$

$s = 4{\cdot}7$

5. (*a*) $\ell + b = 130$

(*b*) $5\ell + 8b = 770$

(*c*) $\ell = 90, \quad b = 40$

6. $A = 41{\cdot}8°, 138{\cdot}2°$

7. 112·3 m

8. $d^2 \neq 22{\cdot}5^2 + 30^2$

Frame is not rectangular

9. (*a*) 15·5 m

(*b*) 4 am (0400 hrs)

10.

$$\begin{aligned} \text{Vol}_{\text{space}} &= \text{Vol}_{\text{cylinder}} - \text{Vol}_{\text{vase}} \\ &= (\pi \times 6^2 \times 20) - (\tfrac{1}{2} \times 12 \times 12 \times 20) \\ &= 720\pi - 1440 \\ &= 720(\pi - 2) \end{aligned}$$

11. (*a*) $1527{\cdot}2\ \text{cm}^2$

(*b*) Minimum is 45 cm.