

Answers

1. $3x + 4y - 26 = 0$
2. (a) $\sqrt{3}y + x - 2\sqrt{3} = 0$ (b) $A(2\sqrt{3}, 0)$
3. (a) $m = \frac{2}{5}c = 5$ (b) $L = \frac{25}{3}$
4. (a) $k = 3$ (b) 1:2
5. (a) $f^{-1}(x) = \sqrt[3]{x-1}$ (b) $1 \leq x \leq 65$
6. (a) max TP at (0,6); POI at (-3,2) (b) max TP at $x = -2$, root at $x = 1$.
7. $(x+1)(x^2 - x + 3)$
8. 3
9. $\log_a\left(\frac{9}{2}\right)$
10. (a) $2\cos\left(x + \frac{\pi}{6}\right)$ (b) (i) -1 (ii) $\frac{5\pi}{6}$
11. (a) $\overrightarrow{AC} = u - t$ (b) $\overrightarrow{MN} = \frac{3}{4}v - \frac{1}{2}t - \frac{1}{2}u$
12. (a) $x = 1$ (b) $y - 6x + 2 = 0$
13. (a) $\cos 2x = \frac{2}{3}$ (b) $\cos x = \frac{\sqrt{30}}{6}$ or $\cos x = \frac{\sqrt{5}}{\sqrt{6}}$