

SQA Higher Grade Exam 2007
Paper 1 Answers

1 $m = 3 \quad y = 3x + 7$

2 $C(7,7,8)$

3 (a) $-2x^2 - 1$ **(b)** $4x - 1$

4 $k < -\frac{1}{4}$

5 $(x - 15)^2 + (y - 8)^2 = 4$

6 $x = 90$ or 270

7 (a) 16, 20, 21 **(b)** i the multiplier ($\frac{1}{4}$) lies between -1 and 1 ii $21\frac{1}{3}$

8 (a) proof **(b)** $A(2,0)$ **(c)** $\frac{22}{3}$ units²

9 (a) $(-\sqrt{3}, 0)$, $(0, 0)$, $(\sqrt{3}, 0)$ **(b)** $(-1, -2)$ min, $(1, 2)$ max **(c)** diagram

10 $\frac{3x}{\sqrt{3x^2 + 2}}$

11 (a) $2 \cos\left(x - \frac{\pi}{6}\right)$

(b) diagram showing $(0, \sqrt{3})$, $(\frac{\pi}{6}, 2)$, $(\frac{2\pi}{3}, 0)$, $(\frac{7\pi}{6}, -2)$, $(\frac{5\pi}{3}, 0)$, $(2\pi, \sqrt{3})$