

SQA Higher Grade Exams 2003
Higher Paper 2 Answers

1 (a)
$$\begin{array}{r|rrrr} 2 & 6 & -5 & -17 & 6 \\ & & 12 & 14 & -6 \\ \hline & 6 & 7 & -3 & 0 \end{array}$$
 remainder 0 when $f(x)$ is divided by $x-2$

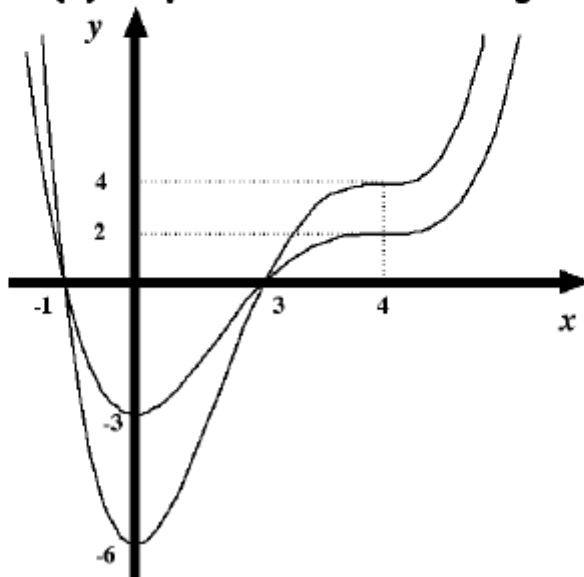
(b) $f(x) = (x-2)(6x^2+7x-3) = (x-2)(3x-1)(2x+3)$

2 $a=4, b=2, c=1$

3 $\frac{128}{3}$ unit²

4 (a) $y=4x-2$ (b) only one solution \Rightarrow tangent (2,6)

5



6 $6 - \sqrt{3}$

7 (a) $\sqrt{29} \sin(x + 68.2)^\circ$ (b) $P(201.8, -\sqrt{29})$ to 1 d.p.

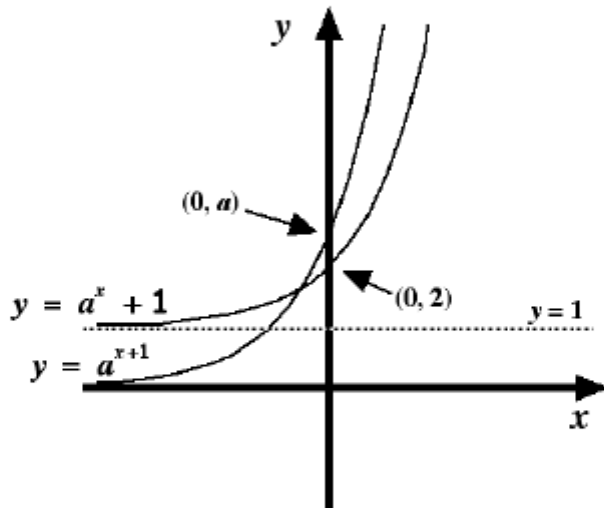
8 (a) $l = \frac{216000}{x^2}$ Surface Area = $2 \times \frac{1}{2}x^2 + 2xl$ etc

(b) $x=60$

9 56.6° (or 0.988 radians)

10 1.23

11 (a)



(b) $a^{x+1} = a^x + 1$