

# 3<sup>rd</sup> yr Maths Paper 2 2008 Mark Scheme

1a)  $1.6 \times 10^8$  (2) Give (1) for  $16 \times 10^7$  or  $160\,000\,000$  b)  $2.8 \times 10^4$  (2)

2a) 136 (1) b) 7.5 (1) c) -2.5 (2) d)  $-\frac{1}{13}$  or -0.0769... (2)

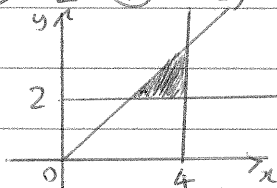
3a) SAS (1) b) RHS (1) c) ASA (1) [All yes]

4a) 1 (1) b)  $\frac{1}{16}$  (1) d) 8 (1)

5) Product of midpoint and frequency (1) Divided by 50 (1)

6)  $x \geq -2$  (1) b)  (1) c)  $-2 < x < 3$  (1)

7)



(2) 1px (1) for each error → [No marks for  $\neq 4.89$  or  $\neq 4.8875$ ]

8) 33.3% (1) [Accept  $33.\dot{3}$ , not 33] b) 25 (2) [Deduct (1) for no working]  $\frac{4.25}{25} = 0.17$

9) sin (1)  $14 \sin 37$  or 8.425... (2) b) cos (1)  $\cos^{-1} \frac{6}{14}$  or 64.62... (2)

10a)  $\frac{360}{17}$  (1) 21.2 (2) ans b) Method (1) 160 (2) c) 25 (2)

11) 1150 (2) (365  $\pi$ ) b)  $\frac{1}{3} \pi h a^2$  (1)

12a)  $\frac{400 \times 30}{200}$  (2) then either  $\frac{24000 \times 30}{1}$  = 60 (2) or  $\frac{12000}{200}$  = 60 (2)

b) 85  $\times 750.5 = 63792.5$  (1)  $\Rightarrow$  84  $\times 750.5 = 63042$  (2)

13) 40 b)  $1.5n^2 + 0.5n$  (3) (1) for  $1.5n^2$  (1) for reasonable attempt at rest  $\rightarrow 0.65$  or similar

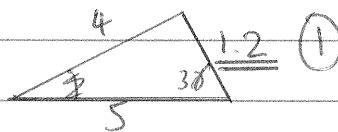
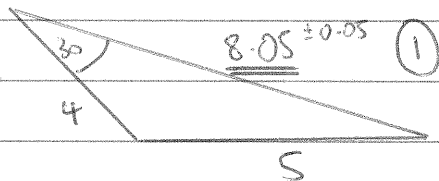
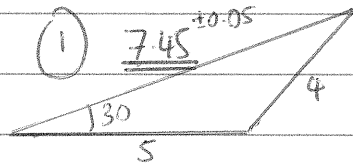
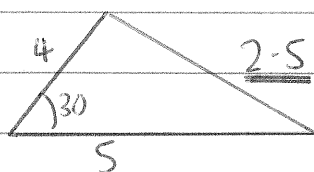
14) (1) for attempt in range  $[0, 1]$  (2) for identifying 0.7 (3) for using value in range  $[0.65, 0.79]$

15a) -3, -5, -5 (2) b) Overall shape (1) Curve in range  $(-1, 0]$  (1) c)  $1 < x < 2$  (1)

15b) Draw line  $y = 6x - 8$  (1)  $0.6 \leq x \leq 0.8$  (2) ← [Must draw line to get any marks!!]

e)  $x^2 + x - 5 = 6x - 8$  rearranges to make  $x^2 - 5x + 3 = 0$  (1)

16)



NOT TO SCALE!