RIGOUR

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Numeracy for Learning, Life and Work

January Higher Maths Calendar

#abitofmathseveryday

1 m = 0·21	2 $\frac{120}{169}$	3 y = -x + 10	4 $u_2 = -\frac{7}{2}$	5 y = 7x	6 $\frac{243}{2}$ units^2
7 Max TP at (-4, -19) and Min TP at (-2, -23)	8 83·7°	9 x < -8, x > 10	10 13 units	11 $-10sinxcosx$	12 $x = 10$
13 (2, 5)	14 Limit = -7	15 $f(x) = x^4 + 9x - 4$	16 $\frac{3 + 8\sqrt{5}}{21}$	17 $\sqrt{29}\cos(x + 21 \cdot 8)°$	18 y = 2x + 5
19 y = -3(x + 2)^2 + 17	20 $\frac{1}{20}(5x + 1)^4 + c$	21 Since 10 > 9 (i.e. d > $r_1 + r_2$)	22 y = 3x - 5	23 0°, 60°, 300°	24 Since $\overrightarrow{RS} : \overrightarrow{ST}$ = 5 : 6 and S is a common point, R, S and T are collinear.
25 $(x - 2)(x + 8)(x - 6)$	26 (3, 15)	27 77·02 years	28 y = -(x - 5)(x + 3)^2	29 Since $b^2 - 4ac$ = -24 there are no real roots and therefore the line does not intersect the curve.	30 a = 4 and b = 5
31 $f^{-1}(x) = \frac{x + 7}{2}$					