



END OF YEAR MOCK EXAMINATION
SECONDARY 3
BASED ON 2024 SEAB SYLLABUS

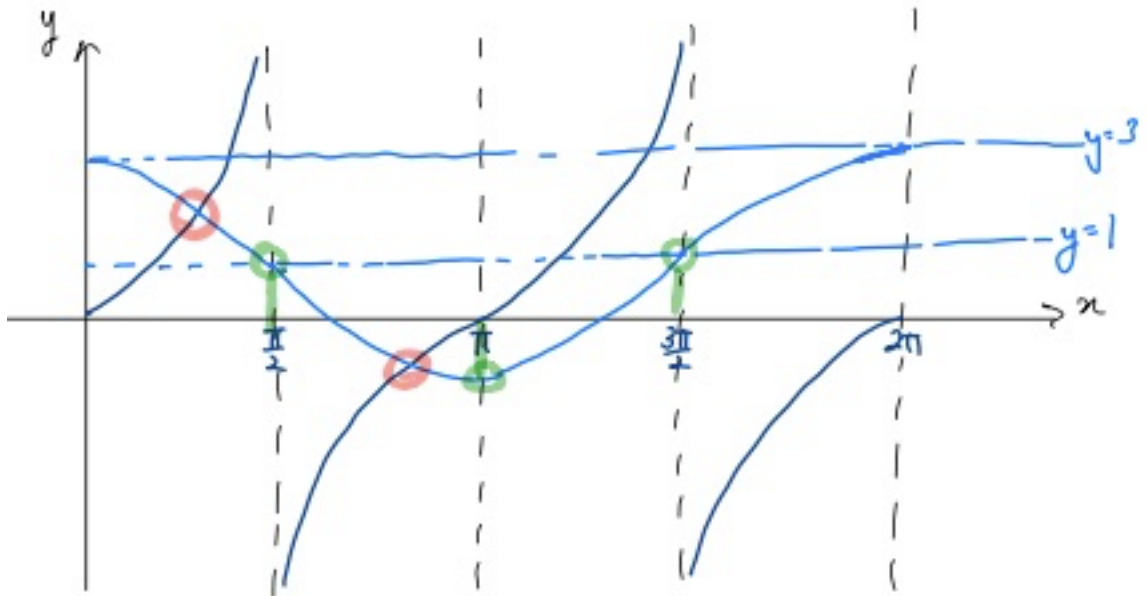
ADDITIONAL MATHEMATICS
Paper 1

4049/01
September 2024
75 minutes

Answer Key

- 1 $m < \sqrt{3}$
- 2 $\frac{146}{121}$
- 3 a) $(x + 1)(3x - 1)(x - 2)$
b) 4 real solutions
- 4 $-\frac{3}{x} + \frac{2}{2x-1} + \frac{4}{x^2+3}$
- 5 $\ln 3 + 1$
- 6 (i) $-108864, -48384$
(ii) In the general term, the power of x is of the form $2r$
(iii) -108864
- 7 (i) Use distance formula
(ii) $y = 3x - 12$
(iii) $(1, -9)$
(iv) 60 units^2
- 8 (i) $\frac{-2p\sqrt{1-p^2}}{1-2p^2}$
(ii) $p\sqrt{1-q^2} - q\sqrt{1-p^2}$
(iii) $\pm\sqrt{\frac{1-q}{2}}$

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Number of solutions = number of intersections of the two graphs = 2

- 10 (a) Centre = $(-3, 5)$, radius = 5
(b) Centre = $(7, 10)$, radius = 6
(c) outside the circle