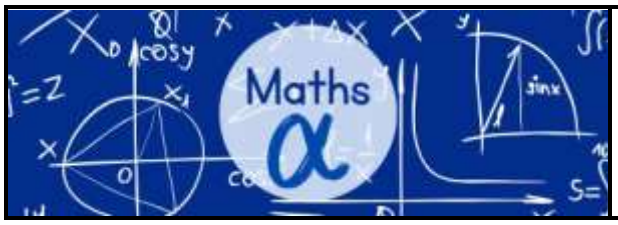


GCSE - Year 10
Weekly Tutorial - 14

mathsalpha.com

1. Expand and simplify; $(3-x)(x+2)(x-4)$

2. Solve; $\frac{3^{2x+1}}{27^x} = 9$

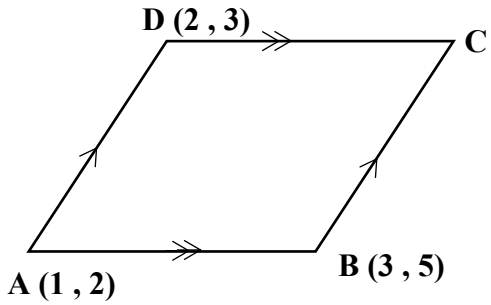
3. $f(x) = \frac{2\sin x+3}{\sin x}$ and $g(x) = \frac{1}{x+1}$

a) Find $f(60^o)$, give the answer in simplified form.

b) Find $gf(x)$

4. Solve; $2x^2 - x - 5 \leq 0$

5.

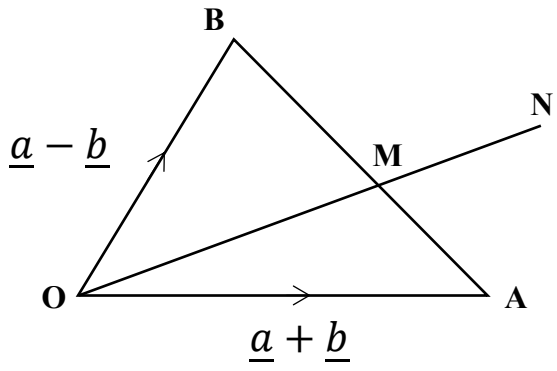


ABCD is a parallelogram

a) Find the coordinates at point C.

b) Find the equation of the line AC.

6.



$\overrightarrow{OA} = \underline{a} + \underline{b}$ and $\overrightarrow{OB} = \underline{a} - \underline{b}$

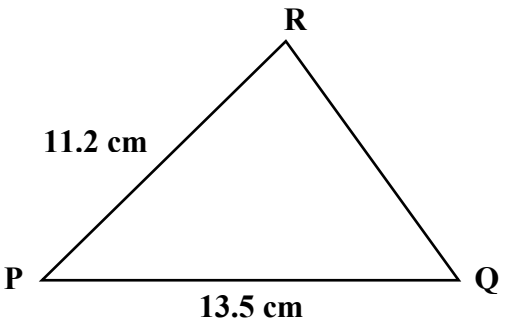
$AM : MB = 1 : 2$

$OM : MN = 2 : 1$

Find the vector $\overrightarrow{AN}$, in terms of $\underline{a}$ and $\underline{b}$

Dharana Siriwarnage, PGD (maths), BSc

7.



The area of triangle PQR is $75.5\ cm^2$
Find the length QR.

8. Sketch the graph of $y = -3x^2 + 2x + 5$, showing axis intercepts and turning point.

9. Simplify.

$$\frac{x+4}{x^2+3x+2} - \frac{x+3}{x+1} \times \frac{2}{2x+6}$$

10. Sketch following graphs.

a) $y = \sin 2x, \ -180^o \leq x \leq 180^o$

b) $y = 2 + \frac{1}{x}$

c) $y = 2^{x-1}$