



GCSE – Year 10

Weekly Tutorial 07

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1. Simplify

a) $\frac{5}{x} + \frac{3}{x+2}$

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

b) $\frac{x-1}{x-2} - \frac{x-2}{x-1}$

e) $\frac{x^2-4}{x+3} \div \frac{x+2}{x^2-9}$

c) $\frac{x+2}{x^2+x-12} + \frac{1}{x+4}$

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

2. Solve by the completing the square. Give the answers in the exact form.

$$3x^2 - 2x = 7$$

3. Solve by using quadratic formula. Give the answers correct to 2dp.

$$2x^2 = 5x + 13$$

4. Rationalize the denominator.

$$\frac{\sqrt{45} + \sqrt{80}}{2\sqrt{5} - 3}$$

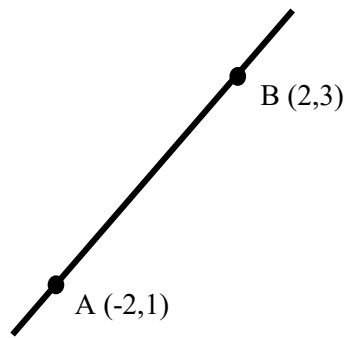
5. $f(x) = \frac{3}{x+1}$ $g(x) = \frac{x+1}{2x}$

a) Find $f(-2)$ and $g(3)$.

b) Find $gf\left(\frac{1}{2}\right)$.

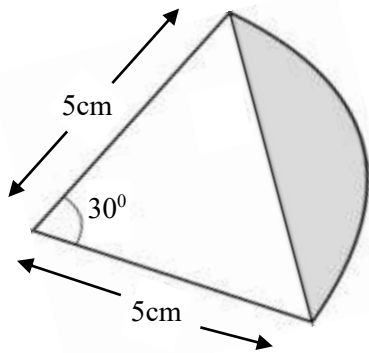
c) Find $g^{-1}(x)$.

6.



Find the equation of the perpendicular bisector of line AB.

7.



Find the shaded area.

8. Solve the inequalities.

$$-7 < 2x - 1 \leq 5$$