Year 09
Weekly Tutorial - 02

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1. Simplify the following without using calculator.

a) $\sqrt{20}+\sqrt{45}$

b) $\sqrt{27}+\sqrt{12}-\sqrt{48}$

c) $\sqrt{50}+\sqrt{98}-\sqrt{18}$

d) $\frac{\sqrt{44}}{\sqrt{11}}$

2. Expand and simplify.

a) $(\sqrt{2}+3)(\sqrt{2}-2)$

b) $(\sqrt{5}+3)(2\sqrt{5}-1)$

c) $(3\sqrt{2}+4)(2\sqrt{2}-5)$

d) $(3\sqrt{3}-2)^2$

3. Rationalize the denominator.

a) $\frac{2+\sqrt{3}}{5-\sqrt{3}}$ **b)** $\frac{3\sqrt{2}-1}{2\sqrt{2}+3}$ **c)** $\frac{5-\sqrt{5}}{7+\sqrt{5}}$

4. Expand and simplify, $(x+3)^2(4-x)$

5. Solve. $2x+5y=3$

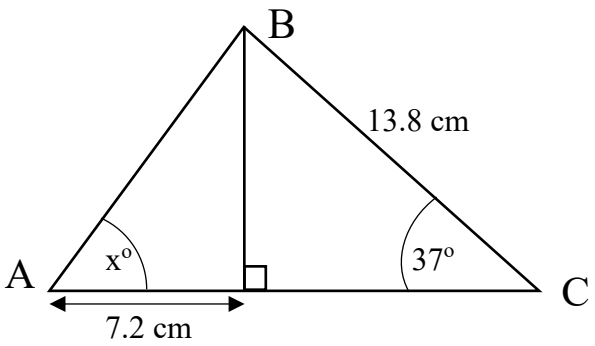
$$\frac{x+y}{2}=x-5$$

6. Solve by factorization, $6x^2+5x-6=0$

7. Make x the subject, $y=\sqrt{\frac{2x-7}{3}}$

8. Mark invests £ 3000 in a bank which gives 2.5% interest per annum. How much interest Mark will earn after 4 years?

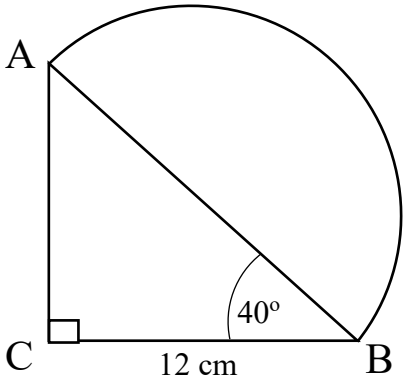
9.



a) Find angle x^o.

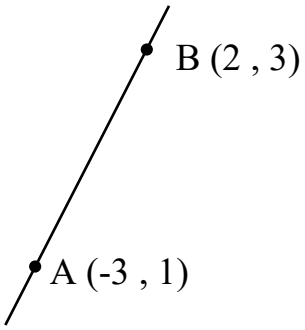
b) Find the area of triangle ABC.
(Give the answer correct to 1dp)

10.



ABC is a right-angled triangle.
AB is the diameter of the half circle.
$BC = 12\ cm$
$CBA\ angle = \ 40^o$
Find the total surface area of the shape.
(Give the answer correct to 1dp)

11.



Find the equation of the line which is passing through points $A(-3,1)$ and $B(2,3)$