

Year 10

Weekly Tutorial 05

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1. Factorize the following expressions.

a) $3x^2 - 27$

b) $2x^2 - x - 15$

2. $f(x) = 3x^2 + 5x$ and $g(x) = x - 3$

a) Find $f(x)$ and $g(10)$

b) Find $fg(x)$

c) Find $h^{-1}(x)$, if $h(x) = \frac{2x-3}{5x+7}$

3. Solve the quadratic equation $(2x - 3)^2 = x + 10$, using quadratic formula. Give the answer in exact form.

4. y is inversely proportional to square of x . when $x = 2.7$, $y = 1.9$. Find x when $y = 2.3$. (Give the answer correct to 2dp)

5. Rationalize the denominator.

$$\frac{3\sqrt{80} - 6}{\sqrt{45} - 9}$$

6. Two containers have paint and those have made with blue and green colours in the ratio 3:5 and 4:3 respectively. If equal amount from each container is mixed, what is the final ratio of blue and green?

7. You have two investment options.

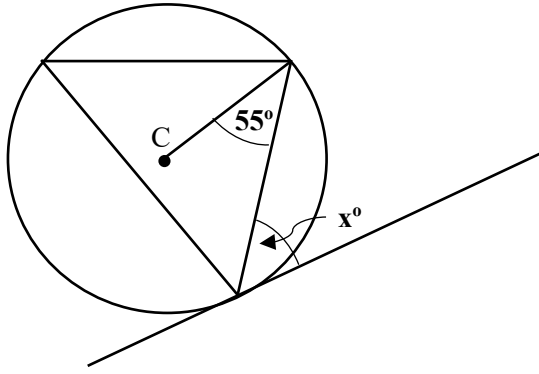
Option A - 2.5% simple interest per annum for a deposit up to £ 10 000.

And 3.8% compound interest for any remaining investment.

Option B - 3% simple interest per annum.

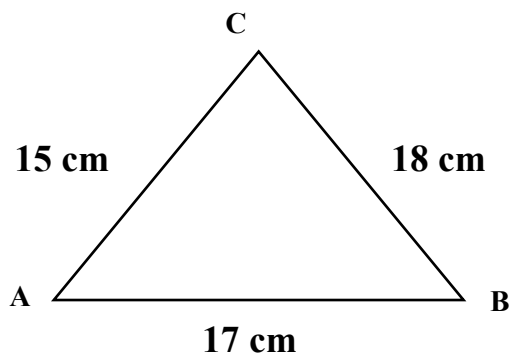
Witch plan should you choose to receive the most interest after investing £ 16 000 for 3 years?

8.



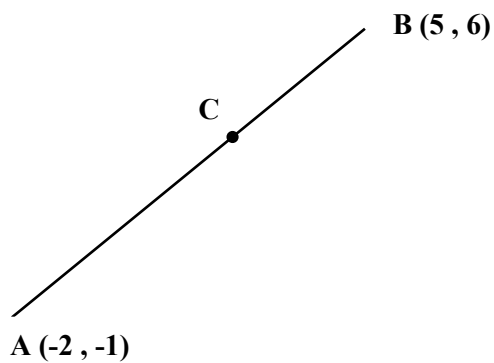
C is the Centre of the circle.
Find the size of angle x° .

9.



Find the area of the triangle ABC,
correct to 1 dp.

10.



$AC : CB = 3 : 2$ line l is passing
through point C and perpendicular to
line AB . Find the equation of line l
in the form $ax + by + c$ where a, b
and c are integers.