

Year 09
Weekly Tutorial - 16

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1. $f(x) = \frac{5x-11}{7x+13}$

a) Find $f\left(\frac{3}{2}\right)$

b) Find $f^{-1}(-2)$

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

a) Find $hg(-3)$

b) Find $g^{-1}(x)$

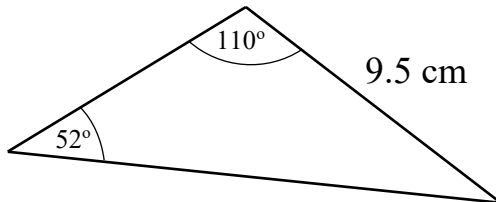
3. $t(x) = \frac{2x+3}{3x-2}$

a) Find $t(\sqrt{5})$. Give the answer in simplest form.

b) Find $t^{-1}(m+1)$

4. Solve; $\frac{(x-1)}{2} = \frac{5-2x}{3x}$

5.



Find the area of the triangle and give the answer correct to 1dp.

6. P is the point with coordinates $(-3,7)$. Q is the point with coordinates $(4,d)$. The gradient of the line PQ is 2.

a) Work out the value of d .

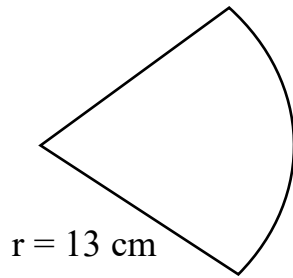
b) Find the coordinates at the midpoint of PQ .

c) Find the length of PQ .

7. Paul makes 200L of new paint by mixing liters of color A and color B paints in a ratio 3:5. Paul buys 5L of paint A for £ 22 and 5L of paint B for £ 28. Paul sells all new paint he makes in 2.5L tins. He sells each tin of new paint for £ 17. Work out Paul's percentage profit if he sells all new paint he made.

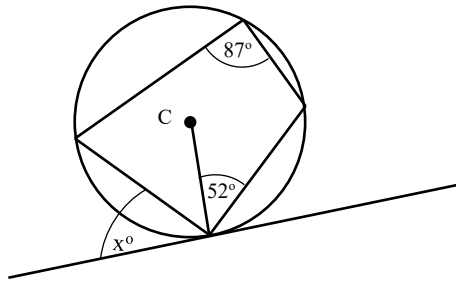
8. y is inversely proportional to x^2 . x is directly proportional to z^3 .
Prove that y is inversely proportional to z^6 .

9.



Find the arc length of the sector if the area is 58.9 cm^2 . Give the answer correct to 1dp.

10.



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