


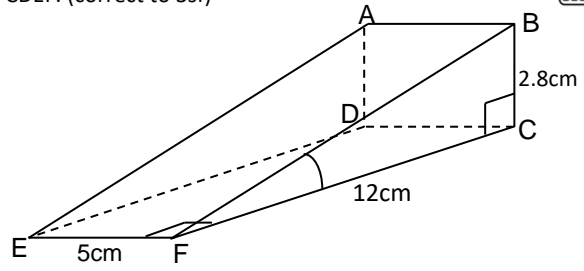
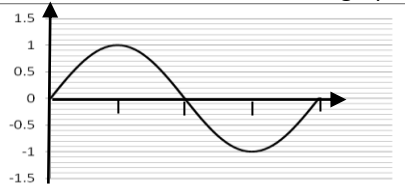

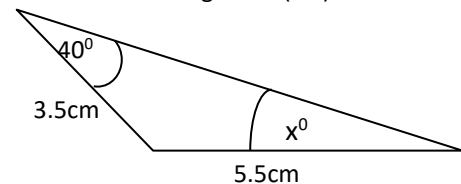

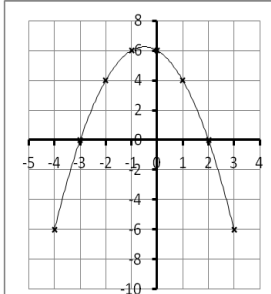

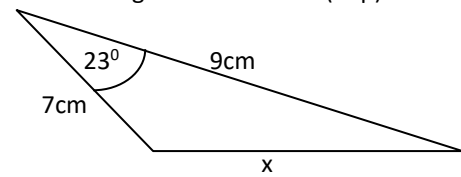
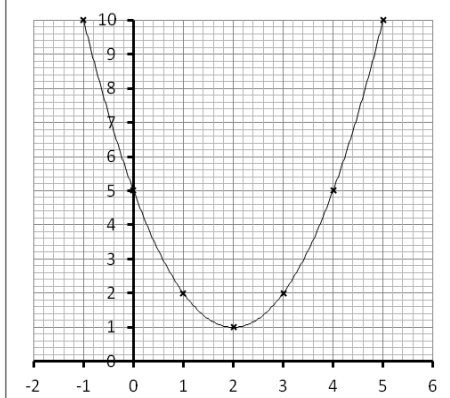
# Maths Key Skills

# Stage 11: Skill Check 7

Name: .....

Date: .....

Class/Group: .....

A: Number & Algebra	B: Algebra, Proportion, Geometry & Measure	C: Geometry & Measure & Statistics
1. Simplify : $\sqrt{2} \times \sqrt{10}$ 11:1	11. Make (b) the new subject of : $w = \frac{3ab}{a-b}$ 11:12	21. Work out the angle that BE makes with the plane CDEF. (correct to 3sf)   11:26
2. Rationalise & simplify to the form: $p+q\sqrt{2}$ : $\frac{\sqrt{18+10}}{\sqrt{2}}$ 11:2	12. One solution for $\sin x = 0.326$ is $x = 19^\circ$ . Use the graph to find another solution.  11:14	22. Find the size of angle 'x'? (3sf)   11:27
3. If $x=16.4$ (1dp) & $y=4.7$ (1dp)  Work out minimum value of $x \div y$ (correct to 2dp)                     11:3	13. This is the graph of $y = f(x)$ . Sketch on the grid: $y = f(-x)$  11:15	23. Find the length of the side 'x'? (1dp)   11:28
4. Simplify the following fraction: $\frac{x^2 + 5x + 4}{4x + 16}$ 11:4	14. Estimate the area under the graph between $x = 2$ and $5$  11:16	15. Find equation of tangent at the point P(1, -4) on a circle with centre (2, -2)                     11:18
5. Solve: $\frac{8}{x+2} - \frac{3}{x-2} = \frac{3x}{x^2-4}$ 11:5	15. Find equation of tangent at the point P(1, -4) on a circle with centre (2, -2)                     11:18	

6. If  $f(x) = 3x$  and  $g(x) = 2x^2 - 5$ , find  $g(f(1))$

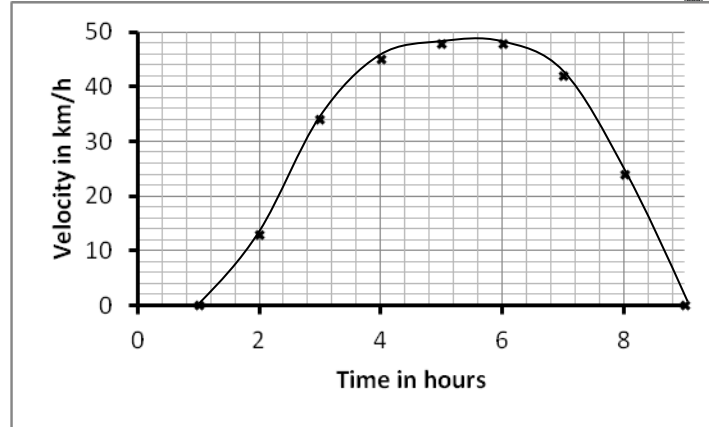
11:7

7. Find the turning point of:  
 $y = x^2 + 2x + 5$

11:8

16. Estimate & interpret the gradient of the tangent at 7 hours.

11:20



24.  $\vec{AB} = \frac{4}{3}\mathbf{a} - 2\mathbf{b}$  and  $\vec{CD} = \mathbf{a} - \frac{3}{2}\mathbf{b}$

11:29

Manipulate the vectors to show clearly that AB and CD are parallel

8. Solve by completing the square:  
 $x^2 - 10x + 3 = 0$   
(Write down the EXACT values)

11:9

17.  $x^3 - 2x^2 - 4 = 0$  can be solved using the iteration formula:



11:21

$$x_{n+1} = \sqrt[3]{2x_n^2 + 4}$$

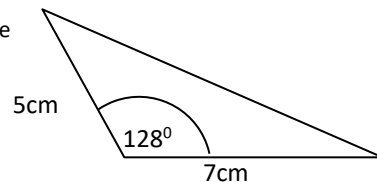
Correct to 2dp

Start with  $x_1 = 2$  & work out an approximation for  $x$  by finding  $x_5$

18. Work out the area of this triangle  
(Correct to 1dp)

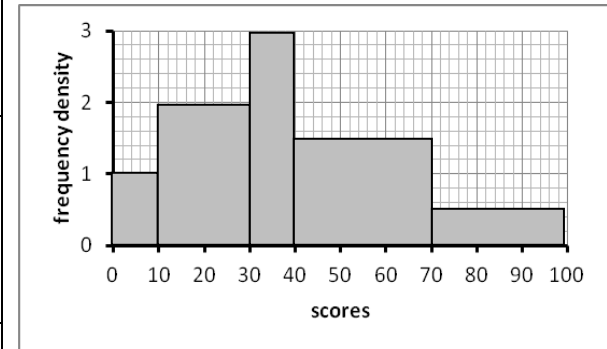


11:22



25. Use the histogram to complete the table:

11:30



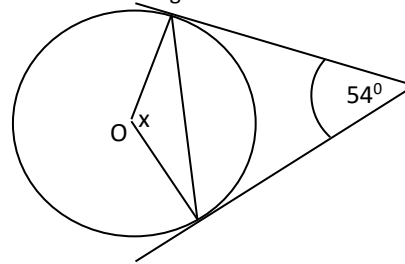
9. To solve:  $3x^2 + x - 5 = 0$  by formula. Give answers in surd form.

11:10

$\pm \sqrt{\quad}$

19. O is the centre. Find the size of angle 'x'

11:23



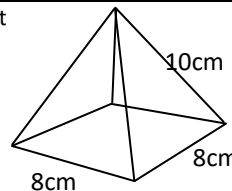
10. Write down the solution set for:  $(2x-3)(x-5) \leq 0$

11:11

20. Work out the perpendicular height of this square based pyramid. (1dp)



11:24



scores	Frequency
$0 < x \leq 10$	
$10 < x \leq 30$	
$30 < x \leq 40$	
$40 < x \leq 70$	
$70 < x \leq 100$	

Total (A)  
Test Total (A+B+C)

Total (B)  
R (0-9)

Y (10-19)

Total (C)  
G (20-25)