

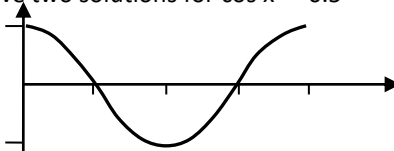
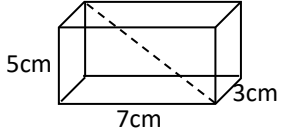
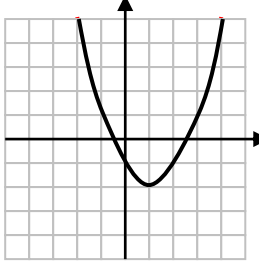
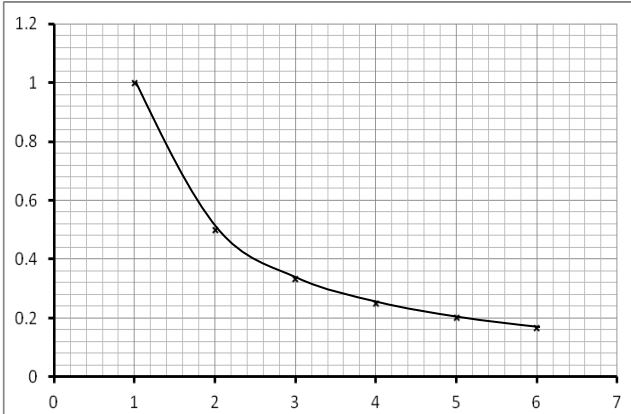
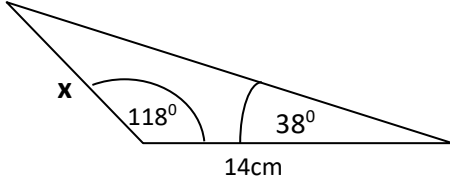
# Maths Key Skills

# Stage 11: Skill Check 5

Name: .....

Date: .....

Class/Group: .....

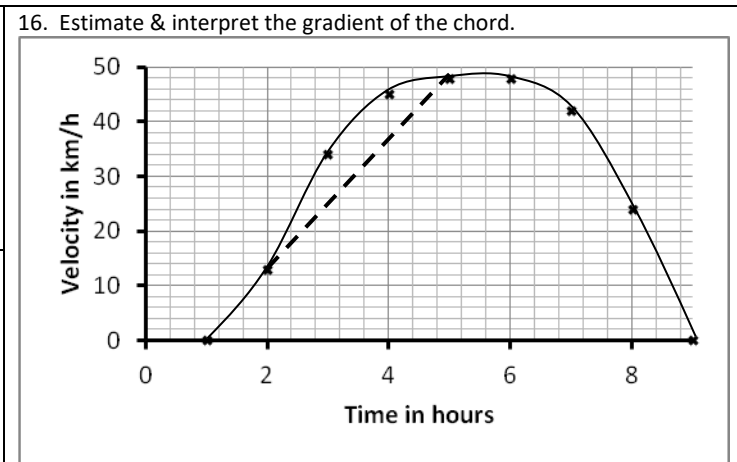
A: Number & Algebra		B: Algebra, Proportion, Geometry & Measure		C: Geometry & Measure & Statistics	
1. Simplify: $\sqrt{8} \div \sqrt{2}$	11:1	11. Make (d) the new subject of : $C = \frac{3-5d}{d-4}$	11:12	21. Work out the angle that base makes with the broken line. (correct to 3sf)	11:26
2. Rationalise & simplify: $\frac{2}{3-\sqrt{5}}$	11:2	12. This the graph of $y = \cos x$ Give two solutions for $\cos x = -0.5$ 	11:14		
3. If $x=3.8(1dp)$ and $y=4.60(2dp)$ Work out maximum value of $y \div x$ .	11:3	13. Sketch on the grid: $y = f(x-1)$ 	11:15	22. <u>Sine</u> or <u>Cosine Rule</u> to find side 'x'?	11:27
4. Simplify the following fraction: $\frac{x^2 - 8x + 15}{2x^2 - 7x - 15}$	11:4	14. Estimate the area under the graph between $x = 3$ and $6$ 	11:16		
5. Solve: $\frac{x+4}{x-2} = x$	11:5	15. Write down the equation of the tangent at (2,3) on the circle $x^2+y^2 = 13$	11:18	23. <u>Sine</u> or <u>Cosine Rule</u> to find angle 'x'?	11:28

6. If  $f(x) = 3x - 2$ , find  $f^{-1}(x)$

11:7

7. Find the turning point of:  
 $y = x^2 + 4x + 1$

11:8



11:20

24. If  $\overline{AB} = \underline{a}$  and  $\overline{CB} = 3\underline{b}$   
Express  $\overrightarrow{CA}$  in terms of  $\underline{a}$  and  $\underline{b}$

11:29

8. Solve by completing the square:  
 $x^2 + 8x - 9 = 0$

11:9

17.  $x^3 - 4x + 1 = 0$  can be solved using the iteration formula:  
 $x_{n+1} = \sqrt[3]{4x_n - 1}$   
Start with  $x_1 = 2$  and work out an approximation for  $x$  by finding  $x_5$  (to 2dp)

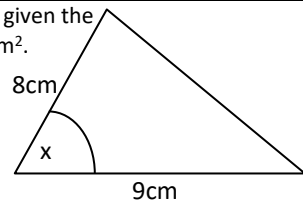


11:21

18. Work out the angle 'x' given the area of this triangle is  $30\text{cm}^2$ .  
(Correct to nearest whole degree)



11:22



25. Use the table to complete the histogram:

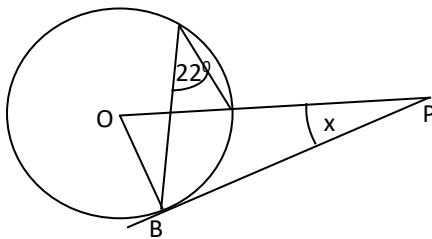
Length (x) minutes	Frequency
$0 < x \leq 5$	4
$5 < x \leq 15$	10
$15 < x \leq 30$	24
$30 < x \leq 40$	20
$40 < x \leq 45$	6

11:30

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

11:10  
  $\pm \sqrt{\text{input}}$

19. O is the centre. Work out angle x.



11:23

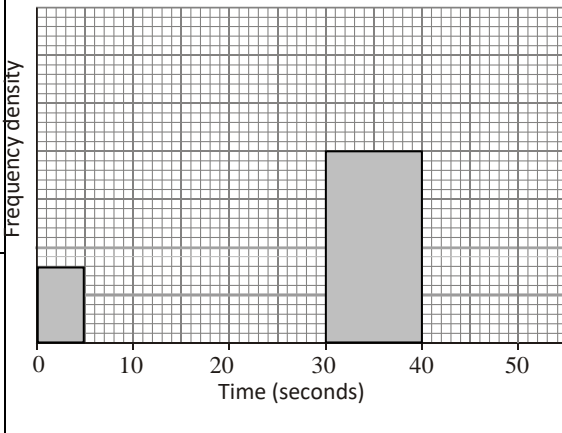
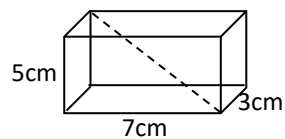
10. Write down the solution set for:  $(x + 2)(x - 3) > 0$

11:11

20. Work out the diagonal length of this cuboid.(1dp)



11:24



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

Total (B)  
R (0-9)

Total (C)  
Y (10-19)

Total (C)  
G (20-25)