Maths Key Skills **Stage 10: Skill Check 6**

Name: ..... Date: ..... Class/Group: .....

A: Number & Algebra

1. Write the answer in standard form *10:1*

$(8 \times 10^5) \div (4 \times 10^{-3})$

2. Estimate to 1dp the value of: *10:2*

$\sqrt{19}$

3. Evaluate: $27^{\frac{2}{3}}$ *10:3*

4. Convert $0.\dot{5}$ to a fraction *10:4*

5. From 10 different toppings, you can choose any 3. How many combinations? *10:5*

6. Expand: $(x-4)(x+1)(x-3)$ *10:6*

7. Factorise: $4a^2 - b^2$ *10:7*

8. Give the gradient of a line perpendicular to: $y = 8 - \frac{1}{2}x$ *10:8*

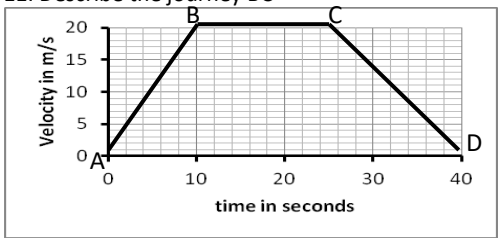
9. Work out the equation of a line joining (3,2) & (0,5) *10:9*

10. Work out the roots of the quadratic graph with the equation *10:12*

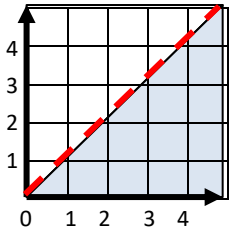
$x^2 - 25 = 0$

B: Algebra, Proportion, Geometry & Measure

11. Describe the journey BC *10:13*



12 . What inequality is represented here? *10:14*



13 Find the nth term of this sequence: *10:15*

2, 8, 18, 32, 50, 72 .....

14. The nth term of a geometric sequence is $\sqrt{3}^n$. Write down the first 3 terms. *10:16*

15. Work out the balance for £2400 invested for 10 years at 5% per annum *10:17*

16. **s = 40, e = 225** *10:18*

Find an equation for s in terms of e if s is directly proportional to √e

17. Give the length of arc diameter 8cm & angle 45^0 in terms of π *10:21*

18. Give the area of sector diameter 8cm & angle 45^0 in terms of π *10:22*

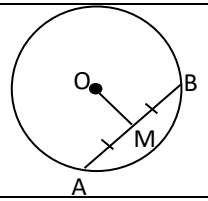
19. Give the CSA of a cone of r= 3cm & perpendicular height 4cm in terms of π. *10:23*
(CSA = πrl) l=slant height

20. Give the volume of a cone of radius 3cm & perpendicular height 8cm in terms of π. *10:24*
(V= ⅓πr²h) h=perpendicular height

C: Geometry & Measure, Statistics & Probability

21. Cuboids A & B are similar *10:26*
The SA of A = $60cm^2$ The SA of B = $1500cm^2$
The lengths of B = **?** x lengths of A

22. M is the midpoint of AB. What else can be derived from this fact? *10:19*



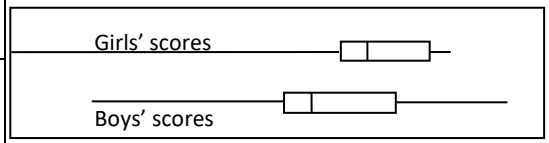
23. Here is a table of the right & left hand students in a class. Work out the probability that a person chosen at random will be: Left-handed, given that she is female i.e. p(L|F) *10:28*

	(R)	(L)	Total
Male (M)	8	3	11
Female (F)	5	2	7
Total	13	5	18

24. Complete the cumulative frequency table *10:29*

Score	f	Score	cf
0≤h<20	4	0≤h<20	
20≤h<40	11	0≤h<40	
40≤h<60	13	0≤h<60	
60≤h<80	15	0≤h<80	
80≤h<100	7	0≤h<100	

25. On <u>average</u> who had the better scores, boys or girls? *10:30*



Total (A)		Total (B)		
Test Total (A+B+C)		R (0-9)	Y (10-19)	G (20-25)