

October

"Skill is only developed by hours and hours of work."
– Usain Bolt



Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

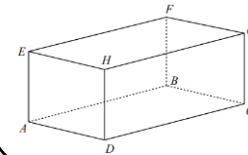
Sunday

1
 $s = ut + \frac{1}{2}at^2$
A car is stopped at traffic lights. When the light is green the car accelerates at 5m/s^2 . How far does the car travel in 10 seconds?

2
The cost of a tax bill increased by 5%. The tax bill after the increase is £672. Work out the cost of the tax bill before the increase.

3
Expand and simplify:
a) $(a + 4)(a - 9)$
b) $(3x + 5)(x - 7)$

4
 $AE = 4\text{cm}$
 $AD = 5\text{cm}$ $DC = 8\text{cm}$
Calculate the length of AG.



5
Rationalise the denominator:
a) $\frac{5}{\sqrt{2}}$
b) $\frac{3}{5 + \sqrt{7}}$

6
Here are the first four terms of a geometric sequence.
 $3 \quad 3\sqrt{5} \quad 15 \quad 15\sqrt{5}$
Find the next two terms.

7
Find the length of side BC.

8
 $a : b = 3 : 7$
 $a : c = 4 : 3$
Find the ratio $a : b : c$
Give your answer in its simplest form.

9
Describe fully the graph with equation $x^2 + y^2 = 81$.

10
Write down the exact value of:
a) $\cos(60)$
b) $\sin(45)$

11
A length, l , is rounded to 2 decimal places. The result is 3.54 Write down the error interval for l .

12
Given that $f(x) = 4x - 3$ find:
a) $f(3)$
b) $f(-2)$
c) Solve $f(x) = 5$

13
Shape A and B are similar. Shape A has a surface area of 20cm^2 and shape B's is 180cm^2 . The length of shape A is 4cm. Find the length of shape B.

14
A has a density of 1.2g/cm^3 . 150cm^3 of A is mixed with some of B to make C. C has a mass of 220g and a density of 1.1g/cm^3 . Find the density of B.

15
Using $x_{n+1} = 3 + \frac{9}{(x_n)^2}$ with $x_0 = 3$ Find the values of x_1, x_2 and x_3 .

16
Calculate the volume of the solid.

17
Find the size of angle PRQ.

18
Find the equation of the line between (2,3) and (5,-6)

19
Calculate the frequency density for the class $0 < x \leq 20$ with a frequency of 64.

20
Write $\frac{5}{12}$ as a recurring decimal.

21
Disprove by counterexample, that for any a , $a \leq a^2$

22
The probability a bus is late on Monday is 0.1 and on Tuesday is 0.3. What is the probability it is late on at least one of the days?

23
 d is directly proportional to the square of t . $d = 80$ when $t = 4$. Work out the positive value of t when $d = 45$

24
Write $\frac{2}{5-x} + \frac{3}{x+7}$ as a single fraction

25
Oxford is on a bearing of 330° from Cambridge. Find the bearing of Cambridge from Oxford.

26
 $177147 = 3^{11}$
 $270 = 3^3 \times 2 \times 5$
Find the LCM of 270 and 177 147. Give your answer using power notation.

27
The first and second terms of a Fibonacci sequence are x and y . Write an expression for the fourth term.

28
An athlete runs 240 metres in 45 seconds. Work out her average speed in kilometres per hour.

29
Calculate $(3.4 \times 10^4) + (2.5 \times 10^5)$

30
Calculate:
a) 4^{-1}
b) 7^{-2}

31
Find the value of y below.

To do's for this month:

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

Important dates:

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Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1 250m	2 £640	3 a) $a^2 - 5a - 36$ b) $3x^2 - 16x - 35$	4 10.2(46 ...)cm
5 a) $\frac{5\sqrt{2}}{2}$ b) $\frac{5 - \sqrt{7}}{6}$	6 75 75 $\sqrt{5}$	7 8.2cm	8 12 : 28 : 9	9 Circle Centre (0,0) Radius 9	10 a) $\frac{1}{2}$ b) $\frac{\sqrt{2}}{2}$	11 3.535 $\leq l <$ 3.545
12 a) 9 b) -11 c) $x = 2$	13 12cm	14 0.8g/cm ³	15 $x_1 = 4$ $x_2 = 3.5625$ $x_3 = 3.7091$	16 1,206.4cm ³	17 45.5°	18 $y = -3x + 9$
19 3.2	20 0.41 $\dot{6}$	21 When $a = 0.5$, $a^2 = 0.25$ $a > a^2$	22 0.37	23 $t = 3$	24 $\frac{15 - x}{(x + 7)(5 - x)}$	25 150°
26 $3^{11} \times 2 \times 5$	27 $2x + 3y$	28 19.2km/h	29 2.84×10^5	30 a) $\frac{1}{4}$ b) $\frac{1}{49}$	31 $y = 40^\circ$	

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- ☐
- ☐
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Important dates:

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