Day 11
Algebra

Question 1 – Foundation & Higher Tier GCSE

(a) Solve: $4c + 7 = 13$

(b) Expand: $c^2(5 - c)$

(c) Simplify: $3c - 5 - 2c + 2$

(d) Factorize: $6y + 15$

(e) Substitute $c = 6$ into: $c^2 - 4c - 15$

Question 2 – Foundation & Higher Tier GCSE

(a) Solve: $4(c + 2) = 5(3 - 2c)$

(b) Expand and simplify: $(3c - 7)^2$

(c) Solve: $18 - 4v > 26$

(d) Rearrange to make c the subject: $H = 3c^2 - d$

(e) Factorize: $y^2 - 3y - 28$

Yesterday's solutions

Question 1

10p,20p,50p,£1	20p,10p,50p,£1	50p,10p,20p,£1	£1,10p,20p,50p
10p,20p,£1,50p	20p,10p,£1,50p	50p,10p,£1,20p	£1,10p,50p,20p
10p,50p,20p,£1	20p,50p,10p,£1	50p,20p,10p,£1	£1,20p,10p,50p
10p,50p,£1,20p	20p,50p,£1,10p	50p,20p,£1,10p	£1,20p,50p,10p
10p,£1,20p,50p	20p,£1,10p,50p	50p,£1,10p,20p	£1,50p,10p,20p
10p,£1,50p,20p	20p,£1,50p,10p	50p,£1,20p,10p	£1,50p,20p,10p

P(correct order) = 1/24

Question 2

(a) Boys did best on average (higher median)

(b) Girls more consistent (smaller Inter Quartile Range and overall range)

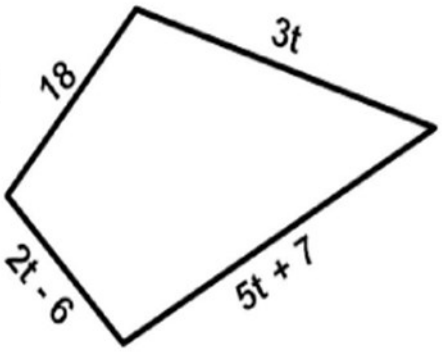
Day 12
Algebra, Geometry & Measures

Question 1 – Foundation & Higher Tier GCSE

a) Write an expression for the perimeter of this quadrilateral and simplify your answer fully.

b) Theo says that when the shape's perimeter is 79cm, t is an integer.

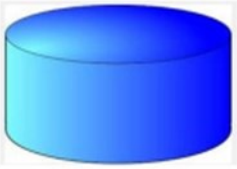
Show clearly that Theo is correct.



Question 2 – Higher Tier GCSE only

Hemisphere:
Diameter = 6t

Cylinder:
Diameter = 6t
Height = h



The volume of the hemisphere is equal to the volume of the cylinder.
Find h in terms of t.

Yesterday's solutions

Question 1

(a) $c = 1\frac{1}{2}$
(b) $5c^2 - c^3$
(c) $c - 3$
(d) $3(2y + 5)$
(e) $36 - 24 - 15 = -3$

Question 2

(a) $c = \frac{1}{2}$
(b) $9c^2 - 42c + 49$
(c) $v < -2$
(d) $c = \sqrt{[(H + d)/3]}$
(e) $(y - 7)(y + 4)$

Day 13
Statistics

Question 1 – Foundation & Higher Tier GCSE

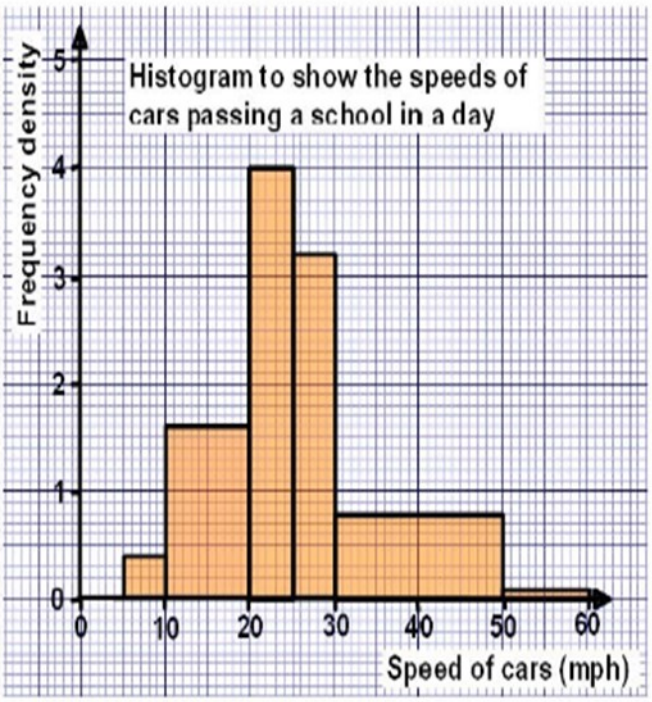
The number of goals scored by Saint Aidan's hockey team in one season is displayed in the table:

No. of Goals	Frequency
0	8
1	12
2	7
3	5
4	5
5	3

Calculate the mean number of goals scored per game

Question 2 – Higher Tier GCSE only

Using the histogram, calculate the number of cars which passed the school during the day:



Yesterday's solutions

Question 1

a) Perimeter = $5t + 7 + 18 + 3t + 2t - 6$

Perimeter = $\underline{10t + 19}$

b) $10t + 19 = 79 \rightarrow 10t = 60 \rightarrow \underline{t = 6}$

Question 2

Vol. of hemisphere = Vol. of cylinder

$4/3 \times \pi \times (3t)^3 \div 2 = \pi \times (3t)^2 \times h$

$18\pi t^3 = 9\pi t^2 h$

$\underline{2t = h}$

Day 14
Number & Algebra

Question 1 – Foundation & Higher Tier GCSE

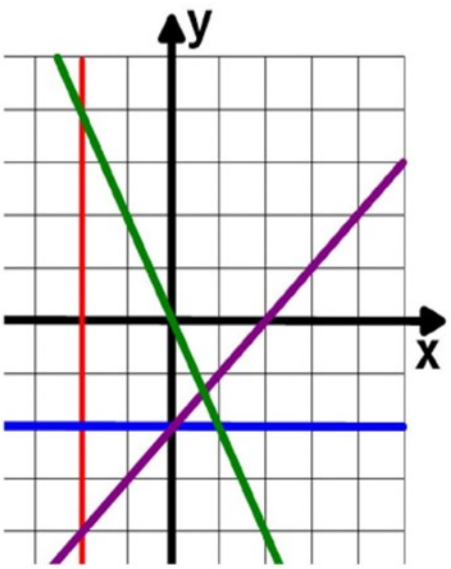
Which equation with which coloured line?

$y = -2$

$y = -2x$

$x = -2$

$y = x - 2$



Question 2 – Foundation & Higher Tier GCSE

(a) Solve: $v^2 - 121 = 0$

(b) Calculate: $3\frac{3}{5} - 1\frac{7}{8}$

(c) Convert into standard form: (i) 3.2 million (ii) 0.00345

(d) Fully simplify: $\dfrac{6a^2b^5c \times 2a^4bc^6}{3a^5b^4c^3}$

Yesterday's solutions

Question 1

Mean = Total goals ÷ Total Games

$= \dfrac{(8x0)+(12x1)+(7x2)+(5x3)+(5x4)+(3x5)}{40}$

$= (0 + 12 + 14 + 15 + 20 + 15) \div 40$

= 1.9 goals per game

Question 2

No. of cars = total frequency(area of bars)

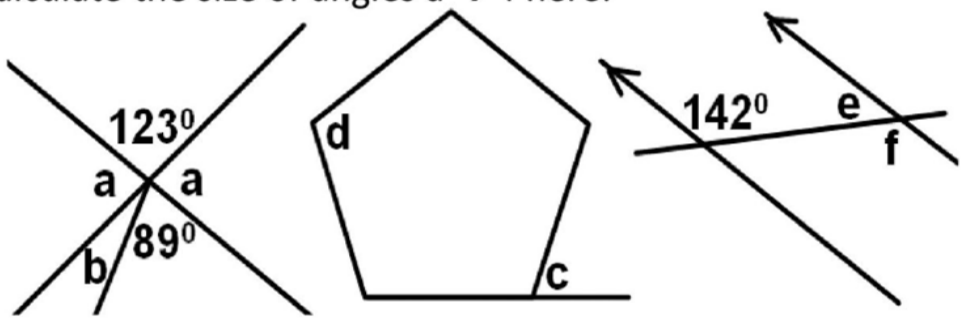
$= (0.4 \times 5) + (1.6 \times 10) + (4 \times 5) + (3.2 \times 5) + (0.8 \times 20) + (0.1 \times 10)$

$= 2 + 16 + 20 + 16 + 16 + 1 =$ 71 cars

Day 15
Algebra, Geometry & Measures

Question 1 – Foundation & Higher Tier GCSE

Calculate the size of angles a → f here:



Question 2 – Higher Tier GCSE only

(a) Find the gradients and intercepts of these equations:

(i) $y = 4x - 5$ (ii) $2y = 12 - 4x$ (iii) $3y - x = 0$

(b) Which of these is a formula for an area:

(i) $4\pi r^2 + 3r$ (ii) $4\pi r^2 + 3r^2$ (iii) $4\pi r + 3r^2$ (iv) $4\pi r + 3r$

(c) Which of these is an "identity" and not an equation:

(i) $3x + 4 = 22$ (ii) $3(2x - 1) = 6x - 3$ (iii) $3(2x - 1) = 2x + 7$

Yesterday's solutions

Question 1

Red line → x = -2
Blue line → y = -2
Purple line → y = x - 2
Green line → y = -2x

Question 2

(a) v = 11 or v = -11
(b) $1\frac{21}{40}$
(c) (i) 3.2×10^6 (ii) 3.45×10^{-3}
(d) $4ab^2c^4$