

## D Summer IGCSE Revision 1

- Solve  $\frac{2x+3}{4} - \frac{x-2}{5} = \frac{1}{2}x$ .  $x = \frac{23}{4}$
- Solve  $\frac{10x}{2x+5} = 2$ .  $x = \frac{5}{3}$
- Solve  $4(x+3)^2 - 4 = 45$ .  $x = \frac{1}{2}$  or  $x = -\frac{13}{2}$
- What is the equation of the line passing through (100, 177) and (55, 87)?  $y = 2x - 23$
- What is the distance between the two points above? 100.623... units
- I start at point A. I walk 3km North and then 7km East. This is point B.
  - What is the distance (to 3sf) of A from B? 7.62km
  - What is the bearing of A from B? 246.80°
  - What is the bearing of B from A? 066.80°
- The face of a prism is a circle of diameter 20cm with a square of perimeter 8cm drilled out of it. It is 2m long. What is
  - Its volume (in  $\text{cm}^3$ )? 62031.85 $\text{cm}^3$
  - Its S.A.? 14786.69 $\text{cm}^2$
- Simplify  $\frac{2x^2y^3 \times 4x^4y}{16x^7y^2}$ .  $\frac{y^2}{2x}$
- Simplify  $-3 \times (-2x)^3$ . 24 $x^3$
- If I invested £1000 in a bank account paying 5% compound interest and another £1000 in an account paying 6% simple interest, how many years would it take for the amount of money in the first account to overtake the amount of money in the second account? 9 years
- A linear (arithmetic) sequence has the following terms;  $-7, -10, -13, -16 \dots$ 
  - Find a formula for the  $n$ th term of the sequence.  $T = -3n - 4$
  - What is the 300th term? -904
  - One of the terms is  $-475$ . Which one? 157th
- The third term of an arithmetic sequence is 7. The sixth term is  $14\frac{1}{2}$ . Find the formula for the  $n$ th term of the sequence.  $T = \frac{5}{2}n - \frac{1}{2}$
- If 6 men can dig 12 trenches in 4 days. How long does it take 2 men to dig 36 trenches? 36 days
- $x$  is inversely proportional to  $y$ . When  $x = 15$ ,  $y = 7$ . What is  $y$  when  $x = 28$ ?  $y = 3.75$
- Generate the first 5 terms of the sequence given by  $T = n^2 - 2^n$ . -1, 0, 1, 0, -7
- Make  $x$  the subject of  $\frac{x+a}{x} = \frac{a+b}{y}$ .  $x = \frac{ya}{a+b-y}$
- A regular hexagon has perimeter 6cm. What is its area?  $A = 2.598 \dots \text{cm}^2$

18. A regular octagon has perimeter 8cm. What is its area?

$$A = 4.828 \dots \text{cm}^2$$

19. An  $n$  sided regular polygon has perimeter  $P$ . Find an expression for its area ( $A$ ) in terms of  $n$  and  $P$ . (This is pretty tough.)

$$A = \frac{P^2}{4n \tan\left(\frac{180}{n}\right)}$$