



YOUNG MASTER CHALLENGE

Bumblebee MATHEMATICS



Sample Knowledge Test Questions

- 1) Given that $\frac{1}{a} + \frac{1}{b} = 5$
and $\frac{2}{a} + \frac{3}{b} = 13$

What is **the value of $a + b$** ?

- A) $5/6$
- B) $1/6$
- C) 1
- D) 5

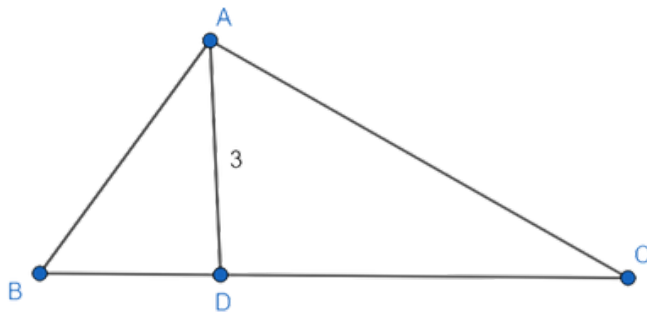
(Topic: Algebra - 2 marks)

- 2) Given that $x - 3 = 7 + 90 + 900 + \dots + 9 \times 10^{2025}$
What is **the value of x** ?

- A) 10^{2025}
- B) 10^{2026}
- C) 9×10^{2025}
- D) 9×10^{2026}

(Topic: Number - 2 marks)

- 3) $BA \perp AC$ and $AD \perp BC$. $\angle ACB = 15^\circ$
What is **the area** of the triangle ABC?



- A) 36
- B) $6(\sqrt{6} + \sqrt{2})$
- C) $6(\sqrt{6} - \sqrt{2})$
- D) 18

(Topic: Geometry - 3 marks)

4) What is the value of the sum

$$\sum_{k=0}^{180} \sin^2(k)^\circ ?$$

A) 180°

B) 90°

C) 46°

D) 45°

(Topic: Trigonometry - 3 marks)

5) The two arithmetic sequences 1,7, 13, and 1,9,17, ...
have infinitely many common terms.

What is **the sum of the first 100** common terms?

A)118900

B)121300

C)237700

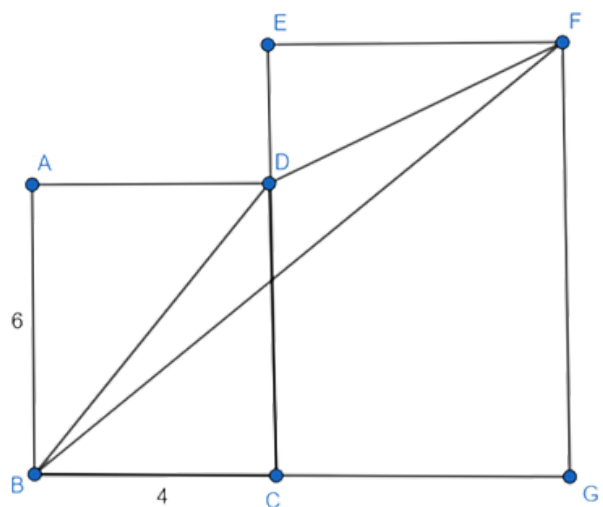
D)240100

(Topic: Series - 5 marks)

6) ABCD and CEFG are rectangles, and $CG:GF = 2:3$.

The points C, D, E lie on the same line.

What **is the area of the triangle BDF**?



A)24

B)18

C)12

D) Can not be determined with the given information

(Topic: Geometry - 5 marks)