

# EXAMEN DE MATEMATICAS

**1**  $b_1 = 0.25$   
 $b_2 = 0.25 \cdot 4 = 1$   $B = b_6 = 256$   
 $b_3 = 1 \cdot 4 = 4$   
 $b_4 = 4 \cdot 4 = 16$   
 $b_5 = 16 \cdot 4 = 64$   
 $b_6 = 64 \cdot 4 = 256$

**3**  $a_1 = +\frac{2}{3}, a_{k+1} = a_k - \frac{1}{2}$   
 $\frac{2 \cdot k - 1}{3} - \frac{1}{2} - \frac{2}{3}$   
 $a = -\frac{2}{3}$

**2**  $a_1 = 25, a_{k+1} = a_k + 4$   
 $a_n = a_2 = a_1 + 4$   
 $a_1 = a_3 = a_2 + 4$   
 $a_n = 25, 29, 33, 37, 41, \dots$

**4**  $a_1 = 4, Y = 3$   
 $a \cdot R^{n-1}$   
 $a_1 = a \cdot 5^{n-1}$   
 $a_1 = 12^{n-1} = 0$   
 $a_1 = 12$   
 $a_2 = 4 \cdot 3^{1-2} = 1$   
 $a_2 = 12^1$   
 $a_2 = 12$

**5**  $\sum_{n=1}^9 \frac{6n-1}{n} = \frac{3 \cdot 1 - 1}{1} + \frac{3 \cdot 2 - 1}{2} + \frac{3 \cdot 3 - 1}{3} + \frac{3 \cdot 4 - 1}{4} + \frac{3 \cdot 5 - 1}{5} +$   
 $\frac{3 \cdot 6 - 1}{6} + \frac{3 \cdot 7 - 1}{7} + \frac{3 \cdot 8 - 1}{8} + \frac{3 \cdot 9 - 1}{9} = 2 + \frac{6+1}{2} + \frac{9-1}{3} +$   
 $\frac{12-1}{4} + \frac{15-1}{5} + \frac{18-1}{6} = \frac{21-1}{8} + \frac{27-1}{9} = 2 + \frac{5}{2} + \frac{8}{3} + \frac{11}{4} +$   
 $\frac{14}{5} + \frac{17}{6} + \frac{20}{7} + \frac{23}{8} + \frac{26}{9} = \frac{60911}{2520}$

**6**  $\sum_{n=1}^6 \frac{1}{2n} = \frac{49}{40}$   
 $\frac{19}{40} = 122$

**7**  $\sum_{n=1}^5 \left(\frac{2}{7}\right)^{n-1}$   
 $S_5 = \frac{3355}{2401}$

**8**  $\frac{42.350.350}{7} = 605050$

**9**  $S_n = \frac{(4^n - 1)}{4 - 1}$

**10**  $\frac{\frac{8}{5}}{\frac{3}{5}} = 2.6$   
 $2.3$