

# THE SOLUTIONS OF THE 1ST WEEK

1-

$$A = (\sqrt{50-7})^{475} \times (\sqrt{50+7})^{475} = ?$$

$$A = [(\sqrt{50-7})(\sqrt{50+7})]^{475}$$

$$A = (\sqrt{50^2 - 7^2})^{475}$$

$$A = (50^2 - 7^2)^{475} = 1^{475}$$

$$A = 1$$

2-

$$5^{(n-1)} = 11, 5^{(n+1)} = ?$$

$$5^{(n-1)} = 11 \rightarrow 5^n \times 5^{-1} = 11$$

$$5^n = 11 \times 5 = 55$$

$$5^n \times 5 = 5^{(n+1)}$$

$$= 55 \times 5 = 275$$

3-

$$\Delta\{a^2 = a+1, b^2 = b+1\} / B = a^5 + b^5 = ?$$

$$B = a^4 \cdot a + b^4 \cdot b$$

$$B = (a+1)^2 \cdot a + (b+1)^2 \cdot b$$

$$B = (a^2 + 2a + 1) \cdot a + (b^2 + 2b + 1) \cdot b$$

$$B = (a+1+2a+1) \cdot a + (b+1+2b+1) \cdot b$$

$$B = a^2 + a + 2a^2 + a + b^2 + b + 2b^2 + b$$

$$B = a+1+a+2(a+1)+a+b+1+b+2(b+1)+b$$

$$B = 5a+5b+6 = 5(a+b)+6$$

$$a^2 - b^2 = a - b \Delta$$

$$a+b=1$$

$$B = 5 \times 1 + 6 = 11$$

