ES4 - N5 Applications of Maths (Numeracy)
Appreciation & Depreciation

Worked Solutions Courtesy of Mr R. Milton

$$\text{FINAL AMOUNT} = \text{INITIAL AMOUNT}\left[\frac{100 \pm \%}{100}\right]^{N}$$

(1) $$\text{FINAL AMOUNT} = 400 \times \left[\frac{100 + 2.8}{100}\right]^{3}$$

$$= 400 \times 1.028^{3}$$

$$= £434.55 \checkmark$$

(2) $$\text{FINAL AMOUNT} = 3500 \times \left[\frac{100 - 13.4}{100}\right]^{4}$$

$$= 3500 \times 0.866^{4}$$

$$= £1968.52 \checkmark$$

(3) FINAL AMOUNT $= 15 \times \left[\frac{100+8}{100}\right]^6$

$= 15 \times 1.08^6$

$= 23.81\text{km}$ ✓

(4) FINAL AMOUNT $= 384 \times \left[\frac{100-7.5}{100}\right]^3$

$= 384 \times 0.925^3$

$= 303.92\text{l}$ ✓

(5) FINAL AMOUNT $= 5040 \times \left[\frac{100+5.6}{100}\right]^4$

$= 5040 \times 1.056^4$

$= £6267.38$ ✓

(6) FINAL AMOUNT $= 400 \times \left[\frac{100-24}{100}\right]^3$

$= 400 \times [0.76^3]$

$= 175.59 \text{ mg}$ ✓

(7) FINAL AMOUNT $= 720 \times \left[\frac{100-9.2}{100}\right]^4$

$= 720 \times 0.908^4$

$= 489.41 \text{ ml}$ ✓

(8) FINAL AMOUNT $= 260500 \times \left[\frac{100+3.7}{100}\right]^5$

$= 260500 \times 1.037^5$

$= £312,393.16$ ✓

(9) FINAL AMOUNT $= 550 \times \left[\frac{100+3}{100}\right]^4$

$= 550 \times 1.03^4$

$= 619 \text{ PUPILS}$ ✓

(10) FINAL AMOUNT $= 499 \times \left[\frac{100-46}{100}\right]^3$

$= 499 \times 0.954^3$

$= £433.26$ ✓

AQ

(1) 1ST MONTH

VALUE $= 799 \times \left[\frac{100-4}{100}\right]^1$

$= 799 \times 0.96$

$= £767.04$

NEXT 2 MONTHS

VALUE $= 767.04 \times \left[\frac{100-6}{100}\right]^2$

$= 767.04 \times 0.94^2$

$= £677.76$

$= £678$ [3 SF] ✓

(2) AFTER 1ST YEAR [2024 - 2025]

$$\text{VALUE} = 37000 \times \left[\frac{100 - 2.7}{100}\right]^1$$

$$= 37000 \times 0.973$$

$$= £36001$$

AFTER 3 MORE YEARS [2025 - 2028]

$$\text{VALUE} = 36001 \times \left[\frac{100 + 4.5}{100}\right]^3$$

$$= 36001 \times 1.045^3$$

$$= 41083.12$$

$$= £44,000 \text{ [2 SF]}$$ ✓