

Test 3: Nr Patterns

Question 1

1.1.1) 10, 12, 14 ✓

$$T_n = 2n \quad \checkmark \checkmark$$

1.1.2) 25, 31, 37 ✓

$$T_n = 6n - 5 \quad \checkmark \checkmark$$

1.1.3) 25, 36, 49 ✓

$$T_n = n^2 \quad \checkmark \checkmark$$

1.1.4) 9, 5, 1 ✓

$$T_n = -4n + 29 \quad \checkmark \checkmark$$

1.1.5) $(5x-5); (6x-6); (7x-7)$ ✓

$$T_n = (x-1)n \quad \checkmark \checkmark$$

1.1.6) $\frac{1}{6}; \frac{1}{7}; \frac{1}{8}$ ✓

$$T_n = \frac{1}{n+1} \quad \checkmark \checkmark$$

$$1.1.7) \frac{5}{2}; 3; \frac{7}{2} \quad \checkmark$$

$$T_n = \frac{1}{2}n \quad \checkmark \checkmark$$

$$1.1.8) 2\frac{3}{4}; 2\frac{1}{2}; 2\frac{1}{4} \quad \checkmark$$

$$T_n = -\frac{1}{4}n + 4 \quad \checkmark \checkmark$$

Question 2

$$2.1) 3, 8, 15$$

$$2.1.1) 24 \text{ flowers} \quad \checkmark$$

* Rest of question is Gr 11 work

$$2.2.1) 43 \text{ cm} \quad \checkmark$$

$$2.2.2) T_n = 8n - 5 \quad \checkmark \checkmark$$

$$T_{13} = 99 \text{ cm}$$

$$2.2.3) \text{rate} = \frac{8}{5} \text{ cm}/\cancel{5} \text{ min} \\ = 1,6 \text{ cm/min} \quad \checkmark$$

$$2.2.4) T_n = 8(5n) - 5 \quad \checkmark \\ = 40n - 5 \text{ cm} \quad \checkmark$$

$$2.2.5) 403 = 8n - 5 \quad \checkmark$$

$$408 = 8n \quad \checkmark$$

$$\therefore n = 51 \quad \checkmark$$

2.3.1) 8, 11, 14 ✓
 $\begin{array}{cc} \vee & \vee \\ +3 & +3 \end{array}$

$$T_n = 3n + 5 \quad \checkmark$$

$$T_{10} = 35 \text{ blocks} \quad \checkmark$$

2.3.2) $T_n = 3n + 5 \quad \checkmark \checkmark \checkmark$

2.3.3) $116 = 3k + 5 \quad \checkmark$

$$111 = 3k \quad \checkmark$$

$$37 = k \quad \checkmark$$

2.3.4) Yes, since $T_5 = 20 \quad \checkmark \checkmark$