

YEAR 7 TEST 11A

1 a 5, 14, 23, 32, 41
 $+9 \quad +9 \quad +9 \quad +9$

b 100, 91, 82, 73, 64
 $-9 \quad -9 \quad -9 \quad -9$

2 Starts with 2 and 11 is added each time.



b 3, 5, 7, 9, 11

c

Diagram number	Number of dots
1 $\times 2$	$+1 \rightarrow 3$
2 $\times 2$	$+1 \rightarrow 5$
3 $\times 2$	$+1 \rightarrow 7$
4 $\times 2$	$+1 \rightarrow 9$
5 $\times 2$	$+1 \rightarrow 11$

d The rule is:
 "double the diagram number and then add 1"

i For the 10th
 $10 \times 2 + 1 = 21$, i.e., 21 dots

ii For the 15th
 $15 \times 2 + 1 = 31$, i.e., 31 dots

4 a i To get the next member, subtract 9 from the previous number.

ii 10

b i To get the next member, add 8 to the previous number.

ii $27 + 8 = 35$

5 a Week 1 20 mins/day
 Week 2 25 mins/day
 Week 3 30 mins/day
 Week 4 35 mins/day

b W1 W2 W3 W4
 20, $20 + 5$, $20 + 2 \times 5$, $20 + 3 \times 5$,

\therefore Rule is $R = 20 + (w - 1) \times 5$

c To reach 1 hour ($R = 60$)

$\therefore 20 + (w - 1) \times 5 = 60$

$\therefore (w - 1) \times 5 = 40$

$\therefore (w - 1) = 8$

$\therefore w = 9$

i.e., Week 9

6 a 5 m

b 0.5 m

7 a Weight of one filled container
 $= 1000 + 150 \text{ g}$ {1 kg = 1000 g}
 $= 1150 \text{ g}$
 $= 1.15 \text{ kg}$
 \therefore the weight of 5 filled containers
 $= 1.15 \text{ kg} \times 5$
 $= 5.75 \text{ kg}$

b Weight of 105 filled containers
 $= 1.15 \text{ kg} \times 105$
 $= 100 \times 1.15 \text{ kg} + 5 \times 1.15 \text{ kg}$
 $= 115 \text{ kg} + 5.75 \text{ kg}$
 $= 120.75 \text{ kg}$