

1142. $a_1 = 2$

$$a_8 = 23 \rightarrow a_8 = a_1 + 7d$$

$$\rightarrow 23 = 2 + 7d$$

$$\rightarrow 7d = 21$$

$$\rightarrow \mathbf{d = 3}$$

$$a_n = a_1 + (n - 1)d$$

$$a_n = 2 + 3(n - 1)$$

$$a_n = 2 + 3n - 3$$

$$\mathbf{a_n = 3n - 1} \rightarrow a_{15} = 3 \cdot 15 - 1 \rightarrow \mathbf{a_{15} = 44}$$

1145. $d > 0$

$$a_1 + a_2 + a_3 = 27$$

$$a_1^2 + a_2^2 + a_3^2 = 275$$

$$\left. \begin{array}{l} a_2 = a_1 + d \\ a_3 = a_1 + 2d \end{array} \right\} \rightarrow a_1 + a_1 + d + a_1 + 2d = 27$$

$$3(a_1 + d) = 27$$

$$\mathbf{a_1 + d = 9} \rightarrow \mathbf{a_1 = 9 - d}$$

$$a_1^2 + (a_1 + d)^2 + (a_1 + 2d)^2 = 275$$

$$a_1^2 + a_1^2 + 2 \cdot a_1 \cdot d + d^2 + a_1^2 + 4 \cdot a_1 \cdot d + 4d^2 = 275$$

$$3a_1^2 + 6 \cdot a_1 \cdot d + 5d^2 = 275$$

$$3(9 - d)^2 + 6 \cdot (9 - d) \cdot d + 5d^2 = 275$$

$$3(81 - 18d + d^2) + 54d - 6d^2 + 5d^2 = 275$$

$$243 - 54d + 3d^2 + 54d - d^2 = 275$$

$$243 + 2d^2 = 275$$

$$2d^2 = 32$$

$$d^2 = 16$$

$$\mathbf{d = 4} \rightarrow \mathbf{a_1 = 5} \rightarrow \mathbf{(5, 9, 13, 17, 21, 25, 29, \dots)}$$

