

6B 7166

① a) 3, 6, 9, ...

$$d = 3$$

$$u_1 = 3$$

(i)

$$u_{15} = 3 + (14)3$$

$$u_{15} = \boxed{45}$$

(ii)

$$\boxed{u_n = 3 + (n-1)3}$$

b) 36, 41, 46, ...

$$d = 5$$

$$u_1 = 36$$

(i) $u_{15} = 36 + (14)5$

$$= \boxed{106}$$

(ii)

$$\boxed{u_n = 36 + (n-1)5}$$

c) 5.6, 6.2, 6.8, ...

$$d = .6$$

$$u_1 = 5.6$$

(i) $u_{15} = 5.6 + (14)(.6)$

$$= \boxed{14}$$

(ii)

$$\boxed{u_n = 5.6 + (n-1)(.6)}$$

②

a) 5, 10, 15, ..., 255

$$d = 5$$

$$u_1 = 5$$

$$u_n = u_1 + (n-1)d$$

$$255 = 5 + (n-1)5$$

$$255 = 5 + 5n - 5$$

$$255 = 5n$$

$$\boxed{51 = n}$$

b) $\frac{1}{2}, \frac{7}{8}, \frac{5}{4}, \dots, 14$

$$\frac{4}{8}, \frac{7}{8}, \frac{10}{8}, \dots, 14 \quad d = \frac{3}{8}$$

$$u_1 = \frac{1}{2}$$

$$14 = \frac{1}{2} + (n-1)\frac{3}{8}$$

$$13.5 = \frac{3}{8}n - \frac{3}{8}$$

$$13.875 = \frac{3}{8}n$$

$$\boxed{37 = n}$$

c) 2m, 5m, 8m, ..., 80m

$$d = 3m$$

$$u_1 = 2m$$

$$80m = 2m + (n-1)3m$$

$$78m = 3mn - 3m$$

$$81m = 3mn$$

$$\boxed{27 = n}$$

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$$\textcircled{1} \quad u_1 = 19$$
$$u_{15} = 31.6$$

$$u_n = u_1 + (n-1)d$$
$$31.6 = 19 + (14)d$$

$$12.6 = 14d$$

$$\boxed{0.9 = d}$$

$$\textcircled{2} \quad u_{10} = 37$$
$$u_{21} = 4$$

$$u_{10} + 11d = u_{21}$$

$$37 + 11d = 4$$

$$11d = -33$$

$$\boxed{d = -3}$$

$$\textcircled{3} \quad 3, x, 8, \dots$$

$$3 + 2d = 8$$

$$2d = 5$$

$$d = 2.5$$

$$3 + 2.5 = x$$

$$\boxed{5.5 = x}$$

$$\textcircled{4} \quad m, 13, 3m-6, \dots$$

solve for "d"

$$\rightarrow d = 13 - m$$

$$m + d = 13$$

$$13 + d = 3m - 6 \rightarrow d = 3m - 19$$

set =

$$\begin{array}{r} 13 - m = 3m - 19 \\ +19 \quad +m \quad \quad +19 \\ \hline 32 = 4m \end{array}$$

$$32 = 4m$$

$$\boxed{8 = m}$$