

**Arithmetic Mean – Day 2**  
Unit 6: Representations of Linear Relations

Find the missing term or terms in each arithmetic sequence.

<p>1. ..., 33, ____, 29, ...</p> $a_n = a_1 + (n-1) \cdot d$ $29 = 33 + (3-1) \cdot d \quad a_2 = 33 - 2 = \boxed{31}$ $29 = 33 + 2d$ $\begin{array}{r} -33 \quad -33 \\ \hline -4 = 2d \\ \frac{-4}{2} = \frac{2d}{2} \\ \boxed{-2 = d} \end{array}$	<p>2. ..., 13, ____, 9, ...</p> $a_n = a_1 + (n-1) \cdot d$ $9 = 13 + (3-1) \cdot d \quad a_2 = 13 - 2 = \boxed{11}$ $9 = 13 + 2d$ $\begin{array}{r} -13 \quad -13 \\ \hline -4 = 2d \\ \frac{-4}{2} = \frac{2d}{2} \\ \boxed{-2 = d} \end{array}$
<p>3. ..., -10, ____, ____, -1, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-1 = -10 + (4-1) \cdot d \quad a_2 = -10 + 3 = \boxed{-7}$ $-1 = -10 + 3d$ $\begin{array}{r} +10 \quad +10 \\ \hline 9 = 3d \\ \frac{9}{3} = \frac{3d}{3} \\ \boxed{3 = d} \end{array}$	<p>4. ..., 14, ____, ____, -10, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-10 = 14 + (4-1) \cdot d \quad a_2 = 14 - 8 = \boxed{6}$ $-10 = 14 + 3d$ $\begin{array}{r} -14 \quad -14 \\ \hline -24 = 3d \\ \frac{-24}{3} = \frac{3d}{3} \\ \boxed{-8 = d} \end{array}$
<p>5. ..., 22, ____, ____, -2, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-2 = 22 + (4-1) \cdot d \quad a_2 = 22 - 8 = \boxed{14}$ $-2 = 22 + 3d$ $\begin{array}{r} -22 \quad -22 \\ \hline -24 = 3d \\ \frac{-24}{3} = \frac{3d}{3} \\ \boxed{-8 = d} \end{array}$	<p>6. ..., -26, ____, ____, 1, ...</p> $a_n = a_1 + (n-1) \cdot d$ $1 = -26 + (4-1) \cdot d \quad a_2 = -26 + 9 = \boxed{-17}$ $1 = -26 + 3d$ $\begin{array}{r} +26 \quad +26 \\ \hline 27 = 3d \\ \frac{27}{3} = \frac{3d}{3} \\ \boxed{9 = d} \end{array}$
<p>7. ..., -39, ____, ____, ____, 81, ...</p> $a_n = a_1 + (n-1) \cdot d$ $81 = -39 + (5-1) \cdot d \quad a_2 = -39 + 30 = \boxed{-9}$ $81 = -39 + 4d$ $\begin{array}{r} +39 \quad +39 \\ \hline 120 = 4d \\ \frac{120}{4} = \frac{4d}{4} \\ \boxed{30 = d} \end{array}$	<p>8. ..., 13, ____, ____, ____, -15, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-15 = 13 + (5-1) \cdot d \quad a_2 = 13 - 7 = \boxed{6}$ $-15 = 13 + 4d$ $\begin{array}{r} -13 \quad -13 \\ \hline -28 = 4d \\ \frac{-28}{4} = \frac{4d}{4} \\ \boxed{-7 = d} \end{array}$
<p>9. ..., -10, ____, ____, ____, 30, ...</p> $a_n = a_1 + (n-1) \cdot d$ $30 = -10 + (5-1) \cdot d \quad a_2 = -10 + 10 = \boxed{0}$ $30 = -10 + 4d$ $\begin{array}{r} +10 \quad +10 \\ \hline 40 = 4d \\ \frac{40}{4} = \frac{4d}{4} \\ \boxed{10 = d} \end{array}$	<p>10. ..., 37, ____, ____, ____, 837, ...</p> $a_n = a_1 + (n-1) \cdot d$ $837 = 37 + (5-1) \cdot d \quad a_2 = 37 + 200 = \boxed{237}$ $837 = 37 + 4d$ $\begin{array}{r} -37 \quad -37 \\ \hline 800 = 4d \\ \frac{800}{4} = \frac{4d}{4} \\ \boxed{200 = d} \end{array}$

<p>11. ..., -33, _____, _____, -13, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-13 = -33 + (5-1) \cdot d$ $-13 = -33 + 4d$ $\begin{array}{r} +33 \\ +33 \end{array}$ <hr/> $\frac{20}{4} = \frac{4d}{4}$ $\boxed{5 = d}$ $a_2 = -33 + 5 = \boxed{-28}$ $a_3 = -28 + 5 = \boxed{-23}$ $a_4 = -23 + 5 = \boxed{-18}$	<p>12. ..., -33, _____, _____, -53, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-53 = -33 + (5-1) \cdot d$ $-53 = -33 + 4d$ $\begin{array}{r} +33 \\ +33 \end{array}$ <hr/> $\frac{-20}{4} = \frac{4d}{4}$ $\boxed{-5 = d}$ $a_2 = -33 - 5 = \boxed{-38}$ $a_3 = -38 - 5 = \boxed{-43}$ $a_4 = -43 - 5 = \boxed{-48}$
<p>13. ..., -16, _____, _____, -1016, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-1016 = -16 + (6-1) \cdot d$ $-1016 = -16 + 5d$ $\begin{array}{r} +16 \\ +16 \end{array}$ <hr/> $\frac{-1000}{5} = \frac{5d}{5}$ $\boxed{-200 = d}$ $a_2 = -16 - 200 = \boxed{-216}$ $a_3 = -216 - 200 = \boxed{-416}$ $a_4 = -416 - 200 = \boxed{-616}$ $a_5 = -616 - 200 = \boxed{-816}$	<p>14. ..., 27, _____, _____, 37, ...</p> $a_n = a_1 + (n-1) \cdot d$ $37 = 27 + (6-1) \cdot d$ $37 = 27 + 5d$ $\begin{array}{r} -27 \\ -27 \end{array}$ <hr/> $\frac{10}{5} = \frac{5d}{5}$ $\boxed{2 = d}$ $a_2 = 27 + 2 = \boxed{29}$ $a_3 = 29 + 2 = \boxed{31}$ $a_4 = 31 + 2 = \boxed{33}$ $a_5 = 33 + 2 = \boxed{35}$
<p>15. ..., -36, _____, _____, 964, ...</p> $a_n = a_1 + (n-1) \cdot d$ $964 = -36 + (6-1) \cdot d$ $964 = -36 + 5d$ $\begin{array}{r} +36 \\ +36 \end{array}$ <hr/> $\frac{1000}{5} = \frac{5d}{5}$ $\boxed{200 = d}$ $a_2 = -36 + 200 = \boxed{164}$ $a_3 = 164 + 200 = \boxed{364}$ $a_4 = 364 + 200 = \boxed{564}$ $a_5 = 564 + 200 = \boxed{764}$	<p>16. ..., -22, _____, _____, 978, ...</p> $a_n = a_1 + (n-1) \cdot d$ $978 = -22 + (6-1) \cdot d$ $978 = -22 + 5d$ $\begin{array}{r} +22 \\ +22 \end{array}$ <hr/> $\frac{1000}{5} = \frac{5d}{5}$ $\boxed{200 = d}$ $a_2 = -22 + 200 = \boxed{178}$ $a_3 = 178 + 200 = \boxed{378}$ $a_4 = 378 + 200 = \boxed{578}$ $a_5 = 578 + 200 = \boxed{778}$
<p>17. ..., -5, _____, _____, 55, ...</p> $a_n = a_1 + (n-1) \cdot d$ $55 = -5 + (7-1) \cdot d$ $55 = -5 + 6d$ $\begin{array}{r} +5 \\ +5 \end{array}$ <hr/> $\frac{60}{6} = \frac{6d}{6}$ $\boxed{10 = d}$ $a_2 = -5 + 10 = \boxed{5}$ $a_3 = 5 + 10 = \boxed{15}$ $a_4 = 15 + 10 = \boxed{25}$ $a_5 = 25 + 10 = \boxed{35}$ $a_6 = 35 + 10 = \boxed{45}$	<p>18. ..., 38, _____, _____, 56, ...</p> $a_n = a_1 + (n-1) \cdot d$ $56 = 38 + (7-1) \cdot d$ $56 = 38 + 6d$ $\begin{array}{r} -38 \\ -38 \end{array}$ <hr/> $\frac{18}{6} = \frac{6d}{6}$ $\boxed{3 = d}$ $a_2 = 38 + 3 = \boxed{41}$ $a_3 = 41 + 3 = \boxed{44}$ $a_4 = 44 + 3 = \boxed{47}$ $a_5 = 47 + 3 = \boxed{50}$ $a_6 = 50 + 3 = \boxed{53}$
<p>19. ..., -35, _____, _____, -71, ...</p> $a_n = a_1 + (n-1) \cdot d$ $-71 = -35 + (7-1) \cdot d$ $-71 = -35 + 6d$ $\begin{array}{r} +35 \\ +35 \end{array}$ <hr/> $\frac{-36}{6} = \frac{6d}{6}$ $\boxed{-6 = d}$ $a_2 = -35 - 6 = \boxed{-41}$ $a_3 = -41 - 6 = \boxed{-47}$ $a_4 = -47 - 6 = \boxed{-53}$ $a_5 = -53 - 6 = \boxed{-59}$ $a_6 = -59 - 6 = \boxed{-65}$	<p>20. ..., -12, _____, _____, 1188, ...</p> $a_n = a_1 + (n-1) \cdot d$ $1188 = -12 + (7-1) \cdot d$ $1188 = -12 + 6d$ $\begin{array}{r} +12 \\ +12 \end{array}$ <hr/> $\frac{1200}{6} = \frac{6d}{6}$ $\boxed{200 = d}$ $a_2 = -12 + 200 = \boxed{188}$ $a_3 = 188 + 200 = \boxed{388}$ $a_4 = 388 + 200 = \boxed{588}$ $a_5 = 588 + 200 = \boxed{788}$ $a_6 = 788 + 200 = \boxed{988}$