

11-1 Practice

- (1) $5, 8, 11, \dots$ $\boxed{14, 17, 20, 23}$
 $d = 3$
- (3) $100, 93, 86, \dots$ $\boxed{79, 72, 65, 58}$
 $d = -7$
- (5) $\frac{7}{2}, 6, \frac{17}{2}, 11, \dots$ $\boxed{\frac{27}{2}, 16, \frac{37}{2}, 21}$
 $d = 2.5$
or $\frac{5}{2}$
- (7) $a_1 = 7, d = 7$
 $\boxed{7, 14, 21, 28, 35}$
- (9) $\boxed{-12, -16, -20, -24, -28}$
- (11) $\boxed{-\frac{5}{6}, -\frac{7}{6}, -\frac{3}{2}, -\frac{11}{6}, -\frac{13}{6}}$
- (13) $a_{10} = 5 + (10-1) \cdot 3 = \boxed{32}$
- (15) $a_{18} = -6 + (18-1) \cdot 2 = \boxed{28}$
- (17) $a_{10} = \frac{9}{5} + (10-1) \cdot -\frac{3}{5} = \boxed{\frac{-243}{5}}$

$$\textcircled{19} \quad \begin{array}{r} 166 = 30 + (n-1) \cdot 4 \\ -30 \quad -30 \end{array}$$

$$\frac{136}{4} = \frac{(n-1) \cdot 4}{4}$$

$$34 = n-1$$

$$\boxed{35 = n}$$

$$\textcircled{21} \quad \boxed{a_n = -5 + (n-1) \cdot 2}$$

$$\textcircled{23} \quad \boxed{a_n = 1 + (n-1) \cdot -2}$$

$$\textcircled{25} \quad \boxed{-5, -1, 3, 7, 11}$$

$$d = \frac{11 - -5}{4} = \frac{16}{4} = 4$$

$$\textcircled{27} \quad 26, 29, 32, \dots$$

$$\begin{array}{r} 101 = 26 + (n-1) \cdot 3 \\ -26 \quad -26 \end{array}$$

$$75 = (n-1) \cdot 3$$

$$25 = n-1$$

$$\boxed{26 = n}$$

week
26

11-2 practice

$$\textcircled{1} \quad S_{13} = \left(\frac{16 + 98}{2} \right) \cdot 13 = \boxed{741}$$

$$\textcircled{3} \quad S_8 = \left(\frac{-5 + -26}{2} \right) \cdot 8 = \boxed{-124}$$

$$\textcircled{5} \quad S_{15} = \left(\frac{6 + -22}{2} \right) \cdot 15 = \boxed{-120}$$

$$\textcircled{7} \quad a_{21} = 13 + (21 - 1) \cdot -6 = -107$$

$$S_{21} = \left(\frac{13 + -107}{2} \right) \cdot 21 = \boxed{-987}$$

$$\textcircled{9} \quad a_n = a_1 + (n - 1) \cdot d$$

$$33 = 5 + (n - 1) \cdot 2$$

$$28 = (n - 1) \cdot 2$$

$$14 = n - 1$$

$$15 = n$$

$$S_{15} = \left(\frac{5 + 33}{2} \right) \cdot 15 = \boxed{285}$$

$$\textcircled{11} \quad a_n = a_1 + (n - 1) \cdot d$$

$$3.8 = a_1 + (10 - 1) \cdot 0.4$$

$$3.8 = a_1 + 3.6$$

$$0.2 = a_1$$

$$S_{10} = \left(\frac{0.2 + 3.8}{2} \right) \cdot 10 = \boxed{20}$$

$$\begin{aligned} \textcircled{13} \quad a_n &= a_1 + (n-1) \cdot d \\ 27 &= 5 + (n-1) \cdot 2 \\ 22 &= (n-1) \cdot 2 \\ 11 &= n-1 \\ 12 &= n \end{aligned}$$

$$S_{12} = \left(\frac{5+27}{2} \right) \cdot 12 = \boxed{192}$$

$$\begin{aligned} \textcircled{15} \quad 272 &= 13 + (n-1) \cdot 7 \\ 259 &= (n-1) \cdot 7 \\ 37 &= n-1 \\ 38 &= n \end{aligned}$$

$$S_{38} = \left(\frac{13+272}{2} \right) \cdot 38 = \boxed{5,415}$$

$$\textcircled{17} \quad S_4 = \left(\frac{-1 + -7}{2} \right) \cdot 4 = \boxed{-16}$$

$$\textcircled{19} \quad S_5 = \left(\frac{5 + -11}{2} \right) \cdot 5 = \boxed{-15}$$

$$\textcircled{21} \quad n = (8-3) + 1 = 6$$

$$S_6 = \left(\frac{5+30}{2} \right) \cdot 6 = \boxed{105}$$

$$(23) \quad S_n = \left(\frac{a_1 + a_n}{2} \right) \cdot n$$

$$-1207 = \left(\frac{14 + -85}{2} \right) \cdot n$$

$$-1207 = -\frac{71}{2}n$$

$$34 = n$$

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

$$-85 = 14 + (34-1) \cdot d$$

$$-99 = 33d$$

$$-3 = d$$

$$\boxed{14, 11, 8}$$

$$(25) \quad S_n = \left(\frac{a_1 + a_n}{2} \right) \cdot n$$

$$\frac{-120}{16} = \left(\frac{a_1 + 15}{16} \right) \cdot 16$$

$$-15 = \frac{a_1 + 15}{2}$$

$$-15 = a_1 + 15$$
$$-15 \quad -15$$

$$-30 = a_1$$

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

$$15 = -30 + (16-1) \cdot d$$
$$+30 \quad +30$$

$$45 = 15d$$

$$3 = d$$

$$\boxed{-30, -27, -24}$$

$$(27) \quad 20, 19, 18, 17, \dots$$
$$a_1, a_2, a_3, a_4, \dots$$

$$S_{20} = \left(\frac{20+1}{2} \right) \cdot 20 = \boxed{210 \text{ towers}}$$

11-3 practice

①

$$r = 2$$

$$\boxed{-120, -240}$$

③

$$r = 1/3$$

$$\boxed{\frac{10}{3}, \frac{10}{9}}$$

⑤

$$r = 3/2$$

$$\boxed{\frac{27}{32}, \frac{81}{64}}$$

⑦

$$\boxed{-1, 3, -9, 27, -81}$$

⑨

$$\boxed{-1/3, -2/3, -4/3, -8/3, -16/3}$$

⑪

$$a_6 = 5(3)^{6-1} = \boxed{1215}$$

⑬

$$a_{10} = -4(-2)^{10-1} = \boxed{2048}$$

⑮

$$a_{12} = 96(1/2)^{12-1} = \boxed{0.046875}$$

$$r = 1/2$$

$$(17) a_9 = -3125(-1/5)^{9-1} = \boxed{-\frac{1}{125}}$$

$$(19) a_n = 1(4)^{n-1}$$

$$(21) a_n = 1 \cdot (1/2)^{n-1}$$

$$(23) a_n = 7 \cdot (-2)^{n-1}$$

$$(25) \left[\begin{array}{ccccc} 3 & 12 & 48 & 192 & 768 \\ a_1 & a_2 & a_3 & a_4 & a_5 \end{array} \right]$$

$$a_n = a_1 (r)^{n-1}$$

$$a_5 = a_1 (r)^{5-1}$$

$$768 = 3(r)^{5-1}$$

$$\frac{768}{3} = \frac{3}{3}(r)^4$$

$$256 = r^4$$

$$4 = r$$

$$(27) \left[\begin{array}{ccccc} 144 & 72 & 36 & 18 & 9 \\ a_1 & a_2 & a_3 & a_4 & a_5 \end{array} \right]$$

$$9 = 144(r)^{5-1}$$

$$\frac{9}{144} = r^4$$

$$\sqrt[4]{\frac{9}{144}} = r \rightarrow r = 1/2$$

10/10/10

