

F.IF.A.3: Sequences 1a

- Which arithmetic sequence has a common difference of 4?
 - $\{0, 4n, 8n, 12n, \dots\}$
 - $\{n, 4n, 16n, 64n, \dots\}$
 - $\{n + 1, n + 5, n + 9, n + 13, \dots\}$
 - $\{n + 4, n + 16, n + 64, n + 256, \dots\}$
- Given the sequence: $x, (x + y), (x + 2y), \dots$
Which expression can be used to determine the common difference of this sequence?
 - $x - (x + y)$
 - $(x + 2y) - (x + y)$
 - $\frac{x}{(x + y)}$
 - $\frac{(x + 2y)}{(x + y)}$
- What is the common difference of the arithmetic sequence 5, 8, 11, 14?
 - $\frac{8}{5}$
 - 3
 - 3
 - 9
- What is the common difference of the arithmetic sequence below?
 $-7x, -4x, -x, 2x, 5x, \dots$
 - 3
 - $-3x$
 - 3
 - $3x$
- What is the common difference in the sequence $2a + 1, 4a + 4, 6a + 7, 8a + 10, \dots$?
 - $2a + 3$
 - $-2a - 3$
 - $2a + 5$
 - $-2a + 5$
- Find the common difference in the arithmetic sequence, a_n , in which $a_1 = 16$ and $a_9 = 36$.
- What is the common ratio of the geometric sequence shown below?
 $-2, 4, -8, 16, \dots$
 - $-\frac{1}{2}$
 - 2
 - 2
 - 6
- The common ratio of the sequence $-\frac{1}{2}, \frac{3}{4}, -\frac{9}{8}$ is
 - $-\frac{3}{2}$
 - $-\frac{2}{3}$
 - $-\frac{1}{2}$
 - $-\frac{1}{4}$
- What is the common ratio of the sequence $\frac{1}{64}a^5b^3, -\frac{3}{32}a^3b^4, \frac{9}{16}ab^5, \dots$?
 - $-\frac{3b}{2a^2}$
 - $-\frac{6b}{a^2}$
 - $-\frac{3a^2}{b}$
 - $-\frac{6a^2}{b}$
- What is the common ratio of the geometric sequence whose first term is 27 and fourth term is 64?
 - $\frac{3}{4}$
 - $\frac{64}{81}$
 - $\frac{4}{3}$
 - $\frac{37}{3}$
- Determine and state whether the sequence 1, 3, 9, 27, ... displays exponential behavior. Explain how you arrived at your decision.

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Answer Section

1 ANS: 3 REF: 011110a2

2 ANS: 2 REF: 011610a2

3 ANS: 3 REF: 061001a2

4 ANS: 4 REF: 061411a2

5 ANS: 1

$$(4a + 4) - (2a + 1) = 2a + 3$$

REF: 011401a2

6 ANS:

$$\frac{36 - 16}{9 - 1} = \frac{20}{8} = 2.5$$

REF: 081630a2

7 ANS: 3

$$\frac{4}{-2} = -2$$

REF: 011304a2

8 ANS: 1

$$\frac{\frac{3}{4}}{-\frac{1}{2}} = -\frac{3}{2}$$

REF: 011508a2

9 ANS: 2

$$\frac{-\frac{3}{32}a^3b^4}{\frac{1}{64}a^5b^3} = -\frac{6b}{a^2}$$

REF: 061326a2

10 ANS: 3

$$27r^{4-1} = 64$$

$$r^3 = \frac{64}{27}$$

$$r = \frac{4}{3}$$

REF: 081025a2

11 ANS:
Yes, because the sequence has a common ratio, 3.

REF: 081726ai