

More Practice: More Arithmetic Sequences

KEY

Find the given term of the arithmetic sequence.

1. $a_1 = 4, d = 3, n = 10$ $a_{10} = 4 + 3(10-1) = 4 + 3(9) = 4 + 27 = 31$

2. $a_1 = 16, d = -3, n = 8$ $a_8 = 16 - 3(8-1) = 16 - 3(7) = 16 - 21 = -5$

3. $a_1 = 100, d = 20, n = 42$ $a_{42} = 100 + 20(42-1) = 100 + 20(41) = 100 + 820 = 920$

The given number is **which** number in the given sequence?

4. 235, $a_n = 4 + 7(n-1)$ $\frac{235}{-4} = \frac{4 + 7(n-1)}{-4}$ $\frac{231}{-7} = \frac{7(n-1)}{-7}$ $33 = n-1$ $n = 34$

5. -83, $a_n = 2 - 5(n-1)$ $\frac{-83}{-2} = \frac{2 - 5(n-1)}{-2}$ $\frac{-85}{-5} = \frac{-5(n-1)}{-5}$ $17 = n-1$ $n = 18$

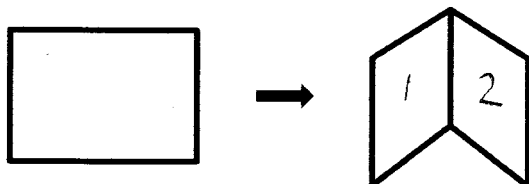
6. 28, $a_n = -200 + 19(n-1)$ $\frac{28}{+200} = \frac{-200 + 19(n-1)}{+200}$ $\frac{228}{19} = \frac{19(n-1)}{19}$ $12 = n-1$ $n = 13$

7. 114, $a = 6, 12, 18, 24, \dots$ $\frac{114}{-6} = \frac{6 + 6(n-1)}{-6}$ $\frac{108}{6} = \frac{6(n-1)}{6}$ $18 = n-1$ $n = 19$

8. -180, $a = 54, 41, 28, \dots$ $\frac{-180}{-54} = \frac{54 - 13(n-1)}{-54}$ $\frac{-234}{-13} = \frac{-13(n-1)}{-13}$ $18 = n-1$ $n = 19$

9. -228.5, $a = -12.5, -17.3, -22.1, \dots$
 $\frac{-228.5}{+12.5} = \frac{-12.5 - 4.8(n-1)}{+12.5}$ $\frac{-216}{-4.8} = \frac{-4.8(n-1)}{-4.8}$ $45 = n-1$ $n = 46$

10. You're making a comic book. You take regular 8.5X11 sheets of paper and fold them over like this:



So that there are 4 panels, 2 on the inside and 2 on the outside.

One panel will be the front cover and one panel will be the back cover.

The panels on the "inside" of the comic are for the story.

1. Using only one sheet of paper gives you how many "story" panels?

$$a_1 = 2$$

2. As you add more pages, there will be more story panels. Write an explicit formula for the sequence that represents the number of story panels you have as a function of the number of sheets of paper.

$$a_n = 2 + 4(n-1)$$

Each new Page: add 4

3. How many story panels will there be if you use 6 sheets of paper?

$$a_6 = 2 + 4(6-1) = 2 + 4(5) = 2 + 20 = 22$$

story Pages

