Arithmetic Sequence

$a_1 + d(n-1)$ The Explicit Formula

1. Durant and Westbrook are playing a three-point challenge game to improve long distance shooting. Each time each of them makes a basket, 3 points are added to their respective scores. Durant has 18 points and Westbrook has 12 points.

Which of the following options has the pair of explicit formulas that represents the number of points for each player as an arithmetic sequence?

a_1 $(n-1)d$

A	Durant: $18 + (n-1)(3)$	Westbrook: $12 + (n-1)(3)$
B	Durant: $18 - (n-1)(3)$	Westbrook: $12 - (n-1)(3)$
C	Durant: $18 + (n-3)$	Westbrook: $12 + (n-3)$
D	Durant: $18 + 3n$	Westbrook: $12 + 3n$

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2. Ethan is saving money in his piggy bank for his upcoming trip to Disney World. On the first day, he put in $12 and plans to add seven more dollars each day.

Part A: Write an explicit formula that can be used to find the amount of money saved on any given day.

$a_n = 12 + 7(n-1)$

$a_{18} = 12 + 7(18-1)$

417
×7
119
12
131

Part B: How much money will he have on the 18th day?

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

2. State whether each sequence is arithmetic and justify your answer. If the sequence is arithmetic, write a recursive and an explicit formula to represent it.

52, 40, 28, 16

−12 −12 −12

Explicit $a_n = a_1 + d(n-1)$

$a_n = 52 - 12(n-1)$

100th

Recursive $a_{n-1} + 12$

5, 7, 9, 11, 13, 15

2, 4, 8, 16, 32

1.1, 1.5, 1.9, 2.3, 2.7

5, 7, 9

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$ax + by = c$

5. $2x - 4y = 4$

(2, 0)

(0, −1)

6. $-2y = 3x - 6$

$\frac{-3x \quad -3x}{}$

$-3x - 2y = -6$

(2, 0)

(0, 3)

Rise/Run $\frac{1}{2}$

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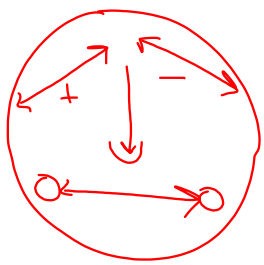

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8. **Biology** To thaw a specimen stored at −25°C, the temperature of a refrigeration tank is raised 5°C every hour. The temperature in the tank after x hours can be described by the function $T(x) = -25 + 5x$.

a. Graph the function and find its intercepts.

b. What does each intercept represent?

$y = 5x - 25$

Temp

Time

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