

3.3 CA
Write 2-Step Equations

Name: _____

Determine if the sequence is arithmetic. If it is, find the common difference.

1. 11,15,19,23,..

Yes or No

Common Diff =
2. 3,6,12,...

Yes or No

Common Diff =
3. -7,-1,5,11,..

Yes or No

Common Diff =

4. Vern has \$400 in his savings account at the beginning of the year. Each month, he saves \$350.

a) Put labels on the table. Organize the data for the first few inputs in a table. Notice the pattern.

x	Expression	y
1	=	
2	=	
3	=	
4	=	
5	=	
...		
	=	
X		

Answer the questions, using your table above.

- b) What is the equation for this scenario?
- c) When will he have enough money to buy his \$899 medical scooter?
- d) How much money will he have at the end of the year? (Hint: How many months are in a year?)

Done

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For questions 5-7:

- I. Write an equation for the arithmetic story problem.**
- II. State what both unknown variables stand for in your equation based on the context.**
- III. Answer the main question.**

Make a table on a separate sheet if necessary.

5. An airplane 30,000 feet above the ground begins descending at a rate of 2,000 feet per minute. Find the altitude of the plane after 5 minutes.

- I. Equation:** _____
- II.** ____ = _____ ____ = _____
- III.** Find the altitude of the plane after 5 minutes.

6. When visiting Baltimore, MD, you need to rent a taxi to get from your hotel to the National Aquarium. The taxi company charges a flat fee of \$3.00 for using the taxi and \$0.75 per mile. How far can you go for \$33? How much would it cost to drive 18 miles?

- I. Equation:** _____
- II.** ____ = _____ ____ = _____
- III.** How far can you go for \$33? How much would it cost to drive 18 miles?

7. Oberon Cell Phone Company advertises service for 3 cents per minute plus a monthly fee of \$29.95. If Parker's phone bill for October was \$38.95, find the number of minutes he used.

- I. Equation:** _____
- II.** ____ = _____ ____ = _____
- III.** If Parker's phone bill for October was \$38.95, find the number of minutes he used.

Arithmetic Patterns

8. Fill in and the table to answer the following questions about the arithmetic sequence below.

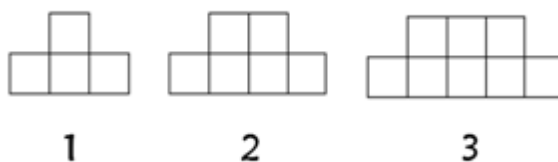
$$44, 24, 4, -16, -36, ..$$

Term		Value
x	Expression	y
1	=	
2	=	
3	=	
4	=	
5	=	
...		
	=	
X		

Questions:

- What is the value of 72nd term of this arithmetic sequence?
- What is an equation for this arithmetic sequence?
- When will the value of the sequence be less than -1000?

9. Fill in and the table to answer the following questions about the arithmetic sequence below.



Term		Value
x	Expression	y
1	=	
2	=	
3	=	
4	=	
5	=	
...		
	=	
X		



Questions:

- a) What is the value of 32nd term of this arithmetic sequence?
- b) What is an equation for this arithmetic sequence?
- c) What term in the sequence will have 144 squares?

Two Moving Objects

10. A bus and a car leave the same place and traveled in opposite directions. If the bus is traveling at 50 mph and the car is traveling at 55 mph, in how many hours will they be 210 miles apart?

a) Organize the data for the first few inputs in a table. Notice the pattern.

Input Time (Hours)	Picture	Output		
		Expression	=	Distance Apart (Miles)
1			=	
2			=	
3			=	
4			=	
5			=	
			=	
x			=	

- b) Write equation and solve.
- c) Check, does your answer seem reasonable?

11. A passenger train travels at 80 mph. A freight train travels at 30 mph. If they travel in opposite directions, how long will it take before they are 275 miles apart?

*****Make a table on a separate sheet if necessary.*****

12. Two joggers start at the same time from opposite ends of a 10-mile jogging trail and begin running toward each other. One jogger is running at a rate of 9 mph, and the other jogger is running at a rate of 6 mph. How long after they start will the two joggers meet?

*****Make a table on a separate sheet if necessary.*****