Warm Up 2/19/19

1. Solve: $4 - 2x = 2(2 - x)$

$4-2x = 4-2x$
$+2x \quad +2x$
$4 = 4$

∞ All Real numbers

2. Evaluate f(-3) $f(x) = x^3 - 12x + 5$

$(-3)^3 - 12(-3) + 5$
$-27 + 36 + 5$
$9 + 5$
$f(-3) = \boxed{14}$

$(-3, 14)$

3. Andre's car was bought for $35,000 in 2013. Today it is worth $20,000. Write an equation to represent the total value of the car.

b (0) 16

$(0, 35000)$
$(6, 20000)$

$b = 35{,}000$
$m = -2{,}500$

$\boxed{y = -2500x + 35000}$

$\frac{-15000}{6} = -2500$

4. Write the equation of the line that has an x-intercept of -6 and y-intercept of 12.

x-intercept $\rightarrow (x, 0)$
y-intercept $\rightarrow (0, y)$
$(-6, 0)$ $(0, 12)$

$m = \frac{12-0}{0+6} = \frac{12}{6} = 2$

$b = 12$

$\boxed{y = 2x + 12}$

Arithmetic Sequences

Finding the nth term

Main Ideas/Questions	Notes
Arithmetic Sequence	A sequence in which the difference between any 2 consecutive terms is constant
Common Difference (d)	the difference (d) between any 2 consecutive terms
Identifying an Arithmetic Sequence	***Determine whether the sequences are arithmetic sequences. If yes, identify the common difference.*** **1.** 1, 5, 9, 13, ... +4 +4 +4 yes d=4 **2.** 1, 3, 5, 8, ... 2 2 3 NO **3.** 8, 6, 4, 2, ... -2 -2 -2 yes d=-2 **4.** -5, -8, -11, -14, ... -3 -3 -3 yes d=-3 **5.** 5, 10, 20, 40, ... 5 10 20 NO **6.** 7, 6, 5, 4, ... yes d=-1
Continuing Arithmetic Sequences	***Given the arithmetic sequence, find the next three terms.*** d=4 **7.** 9, 13, 17, 21, 25, 29, 33 d=-3 **8.** 5, 2, -1, -4, -7, -10, -13 d=6 **9.** -8, -2, 4, 10, 16, 22, 28

rithmetic Sequence Formula	The n^{th} term of an arithmetic sequence can be found using the following formula: $a_n = d(n-1) + a_1$ (a_n = value of the n^{th} te d = common difference a_1 = value of the 1st term	
Examples te the rule for ıe nth term, ıen find a_{19}.	**10.** 7, 13, 19, 25, ... $a_1 = 7$ $d = 6$ $a_n = 6(n-1)+7$ $= 6n-6+7$ $a_n = 6n+1$ $a_{19} = 6(19)+1$ 115	**11.** 30, 26, 22, 18,... $a_1 = 30$ $d = -4$ $a_n = -4(n-1)+30$ $= -4n+4+30$ $a_n = -4n+34$ $a_{19} = -4(19)+34$ $= -42$

$a_1 = 115 \quad d = 35$

$a_n = 35(n-1) + 115$

$35n - 35 + 115$

$\boxed{a_n = 35n + 80}$

$a_{30} = 35(30) + 80$

Real Life Applications	**16.** You visit the Grand Canyon and drop a penny off the edge of the cliff. The distance the penny will fall is 16 feet for the first second,48 feet the next second, 80 feet the third second, and so on. **a.** Write a formula to represent this sequence. **b.** How far will the penny have traveled after 6 seconds?
	17. The total bank loan for Sarah's new car is $15,265. The bank automatically withdraws $295.80 each month to pay off the car. **a.** Write a formula to represent this sequence. **b.** What will be the balance of the loan after 2 years?