Name: _____

Date: _____Per.: _____

Arithmetic Sequences in Context…Guided Practice WS

Directions: After each problem is given, there are a few guiding questions that should help you through the thought process of the problem. Answer these guiding questions, then you will get to the solution of the problem.

1.) Darnell has a job and his saving his paychecks each week.

Weeks	1	2	3	4
Savings	$130	$260	$390	$520

In total, how much will Darnell have saved after 11 weeks?

**How much has Darnell saved after the first week? _____ The second week? _____*
**Write out the first few numbers of this arithmetic sequence until you can see a pattern.*

_____

**What is your first term in the sequence (a_1)? _____*
**What is your common difference (d)? _____*
**What is your n^{th} term? How many weeks into the sequence are you looking for (n)? _____*
**Plug these values into your arithmetic formula, and solve.*

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

Darnell will have saved a total of _____ after 11 weeks.

2.) A new car costs $13,000 and is depreciating by $900 each year. How much will the car be worth after 4 years?

**What operation does "depreciating" suggest? _____*
How much is the car worth after the first year (not at the beginning, but **after one year)? _____*
The second year? _____
**Write out the first few numbers of this arithmetic sequence until you can see a pattern.*

_____

**What is your first term in the sequence (a_1)? _____*
**What is your common difference (d)? _____*
**What is your n^{th} term? How many weeks into the sequence are you looking for (n)? _____*
**Plug these values into your arithmetic formula, and solve.*

The car will be worth _____ after 4 years.

3.) A photographer charges a fee of $69.95 for one person. Each additional person in the picture is $30. What is the total charge if a group of 10 people wish to be photographed?

_____, _____, _____

**Cost for first person to be photographed* **Total cost for 2 people to be photographed* **Total cost for 3 people*

**Do you see the arithmetic sequence above?* _____

*Label the following pieces of the formula:

n = _____ a_1 = _____ d = _____

**Plug these values into your arithmetic formula, and solve.*

It would cost a total of _____ for 10 people to be photographed.

4.) The odometer on a car reads 60,473 miles. Every day, the car is driven 54 miles. What is the odometer reading after 20 days have passed?

_____, _____, _____

Reading **after the first day (NOT THE ORIGINAL MILEAGE)* **Reading after the second day* **Reading after the third day*

**Do you see the arithmetic sequence above?* _____

*Label the following pieces of the formula:

n = _____ a_1 = _____ d = _____

**Plug these values into your arithmetic formula, and solve.*

After 20 days, the odometer would read _____ miles total.

5.) Marie has $180 in a savings account. She plans to deposit $12 per week. Assuming that she does not withdraw any money from her account, what will her balance be in 29 weeks?

_____, _____, _____

**Amount of money in Marie's account after one week* **Amount of money after two weeks* **After three weeks*

**Plug the pieces into your arithmetic formula, and solve. Write your answer in a complete sentence.*

Name: Hey

Date: 12/7/11 Per.: 1,2,4

Arithmetic Sequences in Context…Guided Practice WS

Directions: After each problem is given, there are a few guiding questions that should help you through the thought process of the problem. Answer these guiding questions, then you will get to the solution of the problem.

1.) Darnell has a job and his saving his paychecks each week.

Weeks	1	2	3	4
Savings	$130	$260	$390	$520

In total, how much will Darnell have saved after 11 weeks?

*How much has Darnell saved after the first week? $130 The second week? $260

*Write out the first few numbers of this arithmetic sequence until you can see a pattern.

130, 260, 390, ...

*What is your first term in the sequence (a_1)? 130

*What is your common difference (d)? +130

*What is your n^{th} term? How many weeks into the sequence are you looking for (n)? 11

*Plug these values into your arithmetic formula, and solve.

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

$a_{11} = 130 + (11-1)(130)$

Darnell will have saved a total of $1430 after 11 weeks.

2.) A new car costs $13,000 and is depreciating by $900 each year. How much will the car be worth after 4 years?

*What operation does "depreciating" suggest? Subtraction

*How much is the car worth after the first year (not at the beginning, but **after one year**)? $12,100

The second year? $11,200

*Write out the first few numbers of this arithmetic sequence until you can see a pattern.

12100, 11200, 10300, ...

*What is your first term in the sequence (a_1)? 12,100

*What is your common difference (d)? -900

*What is your n^{th} term? How many weeks into the sequence are you looking for (n)? 4

*Plug these values into your arithmetic formula, and solve.

$a_4 = 12100 + (4-1)(-900)$

$a_4 = 9400$

The car will be worth $9400 after 4 years.

3.) A photographer charges a fee of $69.95 for one person. Each additional person in the picture is $30. What is the total charge if a group of 10 people wish to be photographed?

69.95, 99.95, 129.95
*Cost for first person to be photographed *Total cost for 2 people to be photographed *Total cost for 3 people

*Do you see the arithmetic sequence above? Yup !!

*Label the following pieces of the formula:

n = 10 a_1 = 69.95 d = 30

*Plug these values into your arithmetic formula, and solve.

$a_{10} = 69.95 + (10-1)(30)$

$a_{10} = 339.95$

It would cost a total of $339.95 for 10 people to be photographed.

4.) The odometer on a car reads 60,473 miles. Every day, the car is driven 54 miles. What is the odometer reading after 20 days have passed?

60527, 60581, 60635
*Reading **after** the first day (NOT THE ORIGINAL MILEAGE) *Reading after the second day *Reading after the third day

*Do you see the arithmetic sequence above? Sure do. !!

*Label the following pieces of the formula:

n = 20 a_1 = 60527 d = 54

*Plug these values into your arithmetic formula, and solve.

$a_{20} = 60527 + (20-1)(54)$

$a_{20} = 61553$

After 20 days, the odometer would read 61553 miles total.

5.) Marie has $180 in a savings account. She plans to deposit $12 per week. Assuming that she does not withdraw any money from her account, what will her balance be in 29 weeks?

192, 204, 216
*Amount of money in Marie's account after one week *Amount of money after two weeks *After three weeks

*Plug the pieces into your arithmetic formula, and solve. Write your answer in a complete sentence.

$a_{29} = 192 + (29-1)(12)$

$a_{29} = 528$

Marie's balance after 29 weeks will be $528.