

# WARM-UP

you need a calculator today.

Test.  
FRIDAY

Solve each equation.

1.  $3|2x+5|=9x-6$

2.  $2|4w-5|=12w-18$

$$\frac{3}{3}|2x+5| = \frac{9x-6}{3}$$

$$|2x+5| = 3x-2$$

$$\begin{array}{r} 2x+5 = 3x-2 \\ -2x \quad -2x \\ \hline 5 = x-2 \\ +2 \quad +2 \\ \hline 7 = x \end{array}$$

$$\begin{array}{r} 2x+5 = 3x-2 \\ +3x \quad +3x \\ \hline 5x+5 = 6x-2 \\ -5x \quad -5x \\ \hline 5 = x-2 \\ +2 \quad +2 \\ \hline 7 = x \end{array}$$

Solve and graph each inequality

3.  $\frac{1}{2}|2w-1|-3 \geq 1$

$$\frac{1}{2}|2w-1| \geq 4 \cdot 2$$

$$|2w-1| \geq 8$$

$$\begin{array}{l} 2w-1 \geq 8 \\ +1 \quad +1 \\ \hline 2w \geq 9 \\ w \geq \frac{9}{2} \end{array} \qquad \begin{array}{l} 2w-1 \leq -8 \\ +1 \quad +1 \\ \hline 2w \leq -7 \\ w \leq -\frac{7}{2} \end{array}$$

②  $\frac{2}{2}|4w-5| = \frac{12w-18}{2}$

$$|4w-5| = 6w-9$$

$$\begin{array}{r} 4w-5 = 6w-9 \\ -4w \quad -4w \\ \hline -5 = 2w-9 \\ +9 \quad +9 \\ \hline 4 = 2w \\ \frac{4}{2} \quad \frac{2w}{2} \\ 2 = w \end{array}$$

$$\begin{array}{r} 4w-5 = -6w+9 \\ +6w \quad +6w \\ \hline 10w-5 = 9 \\ +5 \quad +5 \\ \hline 10w = 14 \\ w = \frac{14}{10} = \frac{7}{5} \end{array}$$

2c.

$$|-8 - 6m| > 24$$

Homework  
Questions

$$\begin{array}{r} \cancel{-8} - 6m > 24 \\ \cancel{+8} \quad \quad \quad + 8 \\ \hline \end{array}$$

$$\begin{array}{r} \cancel{-6m} > \frac{32}{-6} \\ \cancel{-6} \quad \quad \quad -6 \end{array}$$

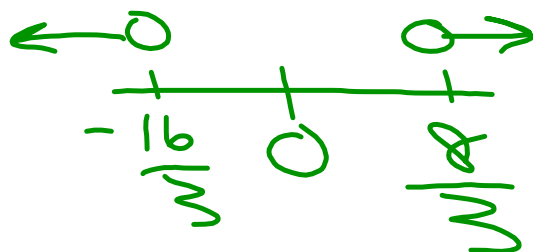
$$m < -\frac{16}{3}$$

$$\begin{array}{r} \cancel{-8} - 6m < -24 \\ \cancel{+8} \quad \quad \quad + 8 \\ \hline \end{array}$$

$$\begin{array}{r} \cancel{-6m} < \frac{-16}{-6} \\ \cancel{-6} \quad \quad \quad -6 \end{array}$$

$$m > \frac{16}{6}$$

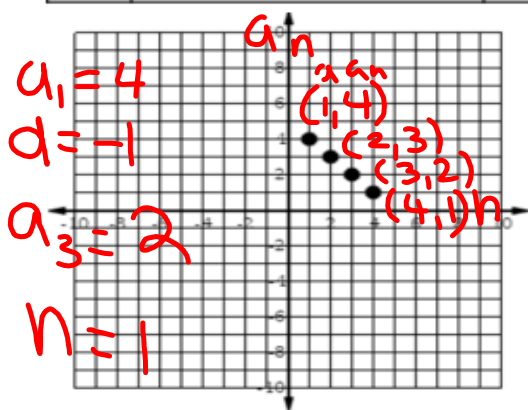
$$m > \frac{8}{3}$$



		Arithmetic Sequences																																
Sequence		an ordered list of numbers. Example: 3, 6, 9, 12...																																
Arithmetic Sequence		an ordered list of numbers with a common difference (d)																																
Term Notation		$a_n$ = any term in the sequence. $a_1$ = the first term    d = common difference																																
Explicit Formula		$a_n = a_1 + d(n-1)$																																
Recursive Formula		$\begin{cases} a_1 = \_ \\ a_n = a_{n-1} + d \end{cases} \quad \begin{cases} a_n = a_{n-1} + d \\ a_1 = \_ \end{cases}$																																
	I DO	WE DO	YOU DO																															
	Find the first 5 terms of the sequence	Find the first 5 terms of the sequence	Find the first 5 terms of the sequence																															
1	$a_n = 5 + 2(n-1)$ 5, 7, 9, 11, 13...	$a_n = 2 - 13(n-1)$ 2, -11, -24, -37, -50...	$a_n = 22 - 6(n-1)$ 22, 16, 10, 4, -2...																															
	Find the 40 <sup>th</sup> term of the sequence	Find the 52 <sup>nd</sup> term of the sequence	Find the 100 <sup>th</sup> term of the sequence																															
2	$a_n = 3n - 6$ 114	$a_n = -5n + 4$ $a_{52} = -5(52) + 4$	$a_n = 2n + 1$ $2(100) + 1$ 201																															
	Write the <u>explicit formula</u> for the sequence.	Write the explicit formula for the sequence.	Write the explicit formula for the sequence.																															
3	<table border="1"> <tr><td>n</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td><math>a_n</math></td><td>19</td><td>12</td><td>5</td><td>-2</td></tr> </table>	n	1	2	3	4	$a_n$	19	12	5	-2	<table border="1"> <tr><td>n</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td><math>a_n</math></td><td>2</td><td>13</td><td>24</td><td>35</td></tr> </table>	n	1	2	3	4	$a_n$	2	13	24	35	<table border="1"> <tr><td>n</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td><math>a_n</math></td><td>1</td><td>8</td><td>15</td><td>22</td></tr> </table>		n	1	2	3	4	$a_n$	1	8	15	22
n	1	2	3	4																														
$a_n$	19	12	5	-2																														
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$a_n = a_1 + d(n-1)$      $a_n = a_1 + d(n-1)$      $a_n = 1 + 7(n-1)$   
 $a_n = 19 - 7(n-1)$      $a_n = 2 + 11(n-1)$

	I DO	WE DO	YOU DO
	Given the sequence, write the explicit formula	Given the sequence, write the explicit formula	Given the sequence, write the explicit formula
4.	$35, 32, 29, 26, \dots$ $a_n = 35 - 3(n-1)$ $= 35 - 3n + 3$ $a_n = 38 - 3n$	$3, -23, -43, -63, \dots$ $a_n = -3 - 20(n-1)$ $a_1 = -3 - 20n + 20$ $a_n = -20n + 17$	$9, 14, 19, 24, \dots$ $a_n = 9 + 5(n-1)$ $a_n = 9 + 5n - 5$ $a_n = 4 + 5n$
	Write the recursive formula for the sequence.	Write the recursive formula for the sequence.	Write the recursive formula for the sequence.
5.	$-4, 3, 10, 17, \dots$ $a_1 = -4$ $d = +7$ $a_n = a_{n-1} + 7$	$-38, -138, -238, -338, \dots$ $a_1 = -38$ $a_n = a_{n-1} - 100$	$-31, -26, -21, -16, \dots$ $a_1 = -31$ $a_n = a_{n-1} + 5$
	Given the explicit formula rewrite it in recursive form.	Given the explicit formula rewrite it in recursive form.	Given the explicit formula rewrite it in recursive form.
6.	$a_n = -1 + 2(n-1)$ $a_1 = -1$ $a_n = a_{n-1} + 2$	$a_n = 22 - 6(n-1)$ $a_1 = 22$ $a_n = a_{n-1} - 6$	$a_n = 55 - 13(n-1)$ $a_1 = 55$ $a_n = a_{n-1} - 12$



For each graph:

Find  $a_1$

Find  $d$

Find  $a_3$

Find  $n$ , when  $a_n = 4$

