## 8-2 Arithmetic Sequences and Partial Sums
## Day 1

**Arithmetic Sequence**: A sequence whose consecutive terms have a common difference d.

Ex 1) 10, 8, 6, 4, 2, … d = $-2$

$8-10=-2$
$2-4=-2$

Ex 2) 3, 5/2, 2, 3/2, 1, … d = $-\frac{1}{2}$

$\frac{5}{2}-3=2\frac{1}{2}-3$

Write the first 5 terms. Assume n= 1.

Ex 3) $a_n = 8 + 13n$

$a_1 = 8+13(1) = 21$
$a_2 = 8+13(2) = 34$
$a_3 = 8+13(3) = 47$
$a_4 = 8+13(4) = 60$
$a_5 = 8+13(5) = 73$

$d = 13$

**Find the formula for $a_n$ for the arithmetic sequence.**

**Form**: $a_n = dn + c$, where $c = a_1 - d$

Ex 4) $a_1 = 2$, d = 3

$c = 2-3$
$c = -1$

$a_n = 3n-1$

Ex 5) 4, 3/2, -1, -7/2, …

$a_1 = 4$

$d = \frac{3}{2}-4$
$d = \frac{3}{2}-\frac{8}{2}$
$d = -\frac{5}{2}$

$c = a_1 - d$
$c = 4+2\frac{5}{2}$
$c = 6\frac{1}{2}$

$a_n = -2.5n+6.5$

Use the table feature of a grapher to find the first 10 terms assuming n begins with 1.

Ex 6) $a_n = 4n - 5$

-1, 3, 7, 11, 15, 19, 23, 27, 31, 35