Name_____ ID: 1

12.1 warm up part II

Date_____ Period_____

Determine if the sequence is arithmetic. If it is, find the common difference, the explicit formula, and the recursive formula.

1) 4, 11, 18, 25, ...

2) $-1, \ -\dfrac{3}{2}, \ -2, \ -\dfrac{5}{2}, \ ...$

Given the recursive formula for an arithmetic sequence find the first five terms and the explicit formula.

3) $a_n = a_{n-1} + 9$
   $a_1 = -26$

Given the explicit formula for an arithmetic sequence find the common difference, the first five terms, and the recursive formula.

4) $a_n = 1 + (n-1) \cdot -7$

Find the common difference, the 52nd term, the explicit formula, and the recursive formula.

5) $-24, \ -31, \ -38, \ -45, \ ...$

Given a term in an arithmetic sequence and the common difference find the explicit formula and the recursive formula.

6) $a_{31} = -210, \ d = -6$

Given two terms in an arithmetic sequence find the common difference, the explicit formula, and the recursive formula. (Notes)

7) $a_{12} = -84$ and $a_{31} = -274$

8) $a_{19} = 130$ and $a_{32} = 195$

Answers to 12.1 warm up part II (ID: 1)

1) Common Difference: $d = 7$
Explicit: $a_n = 4 + (n - 1) \cdot 7$
Recursive: $a_n = a_{n-1} + 7$
$\qquad a_1 = 4$

2) Common Difference: $d = -\dfrac{1}{2}$

Explicit: $a_n = -1 + (n - 1) \cdot -\dfrac{1}{2}$

Recursive: $a_n = a_{n-1} - \dfrac{1}{2}$
$\qquad a_1 = -1$

3) First Five Terms: $-26, \ -17, \ -8, \ 1, \ 10$
Explicit: $a_n = -26 + (n - 1) \cdot 9$

4) Common Difference: $d = -7$
First Five Terms: $1, \ -6, \ -13, \ -20, \ -27$
Recursive: $a_n = a_{n-1} - 7$
$\qquad a_1 = 1$

5) Common Difference: $d = -7$
$a_{52} = -381$
Explicit: $a_n = -17 - 7n$
Recursive: $a_n = a_{n-1} - 7$
$\qquad a_1 = -24$

6) Explicit: $a_n = -30 + (n - 1) \cdot -6$
Recursive: $a_n = a_{n-1} - 6$
$\qquad a_1 = -30$

7) Common Difference: $d = -10$
Explicit: $a_n = 36 - 10n$
Recursive: $a_n = a_{n-1} - 10$
$\qquad a_1 = 26$

8) Common Difference: $d = 5$
Explicit: $a_n = 35 + 5n$
Recursive: $a_n = a_{n-1} + 5$
$\qquad a_1 = 40$