Alg Name_____

3-16 Arithmetic Sequences (ver2)_hw

Date_____ Period____

Find the common difference. Determine if the sequence is arithmetic. If it is, find the next three terms in the sequence, the explicit formula, and the 52nd term.

1) 9, 29, 49, 69, ...

2) 36, 29, 22, 15, ...

3) −3, −5, −7, −9, ...

4) 8, 38, 68, 98, ...

5) −15, −115, −215, −315, ...

6) −3, 3, −3, 3, ...

7) −37, −35, −33, −31, ...

8) 6, −14, −34, −54, ...

9) −23, −27, −31, −35, ...

10) 40, 47, 54, 61, ...

Answers to 3-16 Arithmetic Sequences (ver2)_hw

1) Common Difference: $d = 20$
Yes, arithmetic
Next 3 terms: 89, 109, 129
$a_{52} = 1029$
Explicit: $a_n = -11 + 20n$

2) Common Difference: $d = -7$
Next 3 terms: 8, 1, −6
$a_{52} = -321$
Explicit: $a_n = 43 - 7n$

3) Common Difference: $d = -2$
Yes, arithmetic
Next 3 terms: −11, −13, −15
$a_{52} = -105$
Explicit: $a_n = -1 - 2n$

4) Common Difference: $d = 30$
Yes, arithmetic
Next 3 terms: 128, 158, 188
$a_{52} = 1538$
Explicit: $a_n = -22 + 30n$

5) Common Difference: $d = -100$
Yes, arithmetic
Next 3 terms: −415, −515, −615
$a_{52} = -5115$
Explicit: $a_n = 85 - 100n$

6) Not arithmetic

7) Common Difference: $d = 2$
Yes, arithmetic
Next 3 terms: −29, −27, −25
$a_{52} = 65$
Explicit: $a_n = -39 + 2n$

8) Common Difference: $d = -20$
Yes, arithmetic
Next 3 terms: −74, −94, −114
$a_{52} = -1014$
Explicit: $a_n = 26 - 20n$

9) Common Difference: $d = -4$
Yes, arithmetic
Next 3 terms: −39, −43, −47
$a_{52} = -227$
Explicit: $a_n = -19 - 4n$

10) Common Difference: $d = 7$
Yes, arithmetic
Next 3 terms: 68, 75, 82
$a_{52} = 397$
Explicit: $a_n = 33 + 7n$