Name: _____ Date: _____

Review for Quiz Unit 5

1. A recovering heart attack patient is told to get on a regular walking program. The patient is told to walk a distance of 5 km the first week, 8 km the second week, 11 km the third week and so on for a period of 10 weeks. At that point the patient is to maintain the distance walked during the 10th week.

n	an
1	5
2	8
3	11

a. Write an explicit formula for this arithmetic sequence.

$a_1 = 5$, $d = 3$

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

$a_n = 5 + 3(n-1)$

$a_n = 5 + 3n - 3$

$\boxed{a_n = 3n + 2}$

b. How far will the patient walk during the 10th week?

$a_{10} = 3(10) + 2$

$\boxed{a_{10} = 32}$ $\boxed{32\text{ km}}$

2. **Consider a sequence that follows -19, -16, -13, -10, ...**

a. Write the recursive formula.

$\boxed{a_1 = -19}$

$\boxed{a_n = a_{n-1} + 3}$

b. Write the explicit formula.

$a_1 = -19$, $d = 3$

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

$a_n = -19 + 3(n-1)$

$a_n = -19 + 3n - 3$

$\boxed{a_n = 3n - 22}$

c. Find the 60th term.

$n = 60$

$a_{60} = 3(60) - 22$

$\boxed{a_{60} = 158}$

3. Which linear equation represents the data in the accompanying table?

1) $d = 1.50c$

2) $d = 1.50c + 20.00$

3) $d = 20.00c + 1.50$

4) $d = 21.50c$

c	d
0	20.00
1	21.50
2	23.00
3	24.50

$a_1 = 21.50$

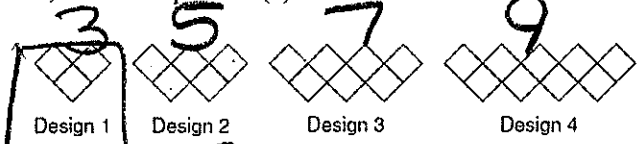
$d = 1.50$

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

$a_n = 21.50 + 1.50(n-1)$

$a_n = 21.50 + 1.50n - 1.50$

4. If the pattern below continues, which equation(s) is a recursive formula that represents the number of squares in this sequence?



a_1 a_2

1) $y = 2x + 1$

2) $y = 2x + 3$

3) $a_1 = 3$

$a_n = a_{n-1} + 2$

4) $a_1 = 1$

$a_n = a_{n-1} + 2$

5. For the sequence $-27, -12, 3, 18, \ldots$, the expression that defines the nth term where $a_1 = -27$ is

1) $15 - 27n$

2) $15 - 27(n-1)$

3) $-27 + 15n$

4) $-27 + 15(n-1)$

n	a_n	
1	-27	
2	-12	+15
3	3	+15
4	18	+15

$a_1 = -27$

$d = 15$

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

$a_n = -27 + 15(n-1)$

$-4 \; -4 \; -4$

6. Which function defines the sequence $-6, -10, -14, -18, \ldots$, where $f(6) = -26$?

1) $f(x) = -4x - 2$

2) $f(x) = 4x - 2$

3) $f(x) = -x + 32$

4) $f(x) = x - 26$

$a_1 = -6$

$d = -4$

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

$a_n = -6 - 4(n-1)$

$a_n = -6 - 4n + 4$

$a_n = -4n - 2$