Name: _____

Worksheet ID: 1

Sequences and Exponental Functions Practice Test

1) Write the explicit formula for the sequence:

$-77, -65, -53, -41 \ldots$

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2) Write the explicit formula for the sequence:

$8, 16, 24, 32 \ldots$

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3) Find the 30th number in the sequence:

$-10, -2, 6, 14...$

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4) Find the 29th number in the sequence:

$7, -9, -25, -41...$

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5) Write the explicit formula for the sequence:

$-7, -56, -448, -3584 \ldots$

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6) Write the explicit formula for the sequence:

$-11, -99, -891, -8019 \ldots$

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7) Find the 10th number in the sequence:

$5,\ 25,\ 125,\ 625 \ldots$

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8) Find the 16th number in the sequence:

$-11,\ -110,\ -1100,\ -11000 \ldots$

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9) Write the first four numbers of sequence given the following explicit formula:

$a_n = 10n + 64$

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10) Write the first four numbers of sequence given the following explicit formula:

$a_n = -13n + 103$

11) Write the first four numbers of sequence given the following explicit formula:

$a_n = -11(8)^{n-1}$

12) Write the first four numbers of sequence given the following explicit formula:

$a_n = 11(4)^{n-1}$

13) You have \$7093 in a bank account that pays 9% interest. Write an equation for how much money you will have after 14 years.

14) You have \$5672 in a bank account that pays 9% interest. Write an equation for how much money you will have after 10 years.

15) You bought a car for \$7982, but it loses its value at a rate of 12% per year, write an equation for how much the car will be worth after 9 years.

16) You bought a car for \$3780, but it loses its value at a rate of 12% per year, write an equation for how much the car will be worth after 18 years.

17) There are 377 bacteria present in a colony. The number of bacteria doubles every 3 hours. Write an equation for how many bacteria will be present after 12 hours have passed.

18) There are 396 bacteria present in a colony. The number of bacteria doubles every 7 hours. Write an equation for how many bacteria will be present after 42 hours have passed.

19) A medicine has a half-life of 6 hours. You have 537 mg, write the equation for how much will you have in your system after 24 hours have passed.

20) A medicine has a half-life of 4 hours. You have 729 mg, write the equation for how much will you have in your system after 28 hours have passed.

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21) You ave made an investment of \$741 that gains 2.17% interest. Write an equation for how much your investment will be worth after 20 years.

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22) You ave made an investment of \$560 that gains 6.13% interest. Write an equation for how much your investment will be worth after 8 years.

Answer Key: 1) $a_n = 12n - 89$ 2) $a_n = 8n + 0$ 3) 222 4) -441
5) $a_n = -7(8)^{n-1}$ 6) $a_n = -11(9)^{n-1}$ 7) 9765625 8) -11000000000000000
9) $74, 84, 94, 104\ldots$ 10) $90, 77, 64, 51\ldots$ 11) $-11, -88, -704, -5632\ldots$
12) $11, 44, 176, 704\ldots$ 13) $7093{*}1.09^{14}$ 14) $5672{*}1.09^{10}$ 15) $7982{*}0.88^{9}$
16) $3780{*}0.88^{18}$ 17) $377{*}2^{4}$ 18) $396{*}2^{6}$ 19) $537{*}(\frac{1}{2})^{4}$ 20) $729{*}(\frac{1}{2})^{7}$
21) $741 * 1.0217^{20}$ 22) $560 * 1.0613^{8}$