

Use this space for computations.

13 Which value of  $x$  satisfies the equation  $\frac{5}{6}\left(\frac{3}{8} - x\right) = 16$ ?

- (1) -19.575
- (2) -18.825
- (3) -16.3125
- (4) -15.6875

Plug in answers in calculator to check: ↓  
 $\left(\frac{5}{6}\right)\left(\left(\frac{3}{8}\right) - (\underline{\quad})\right) \stackrel{?}{=} 16$

14 If a population of 100 cells triples every hour, which function represents  $p(t)$ , the population after  $t$  hours?

- (1)  $p(t) = 3(100)^t$
- (2)  $p(t) = 100(3)^t$
- (3)  $p(t) = 3t + 100$
- (4)  $p(t) = 100t + 3$

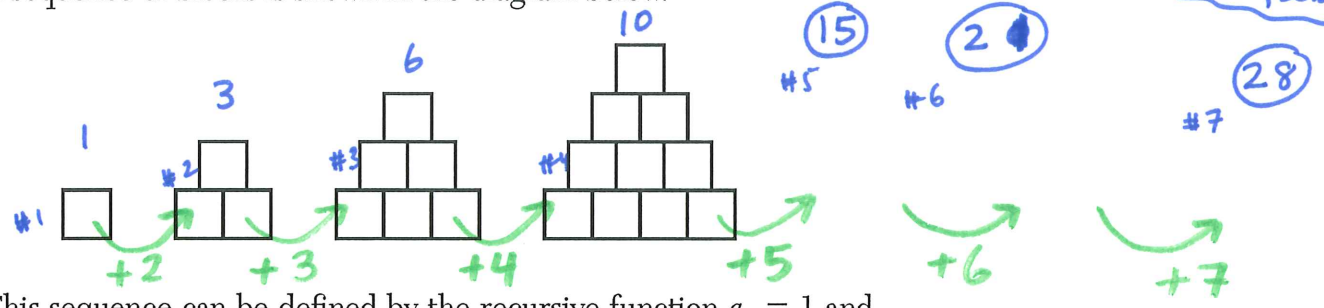
| hours | x | y cell count |
|-------|---|--------------|
|       | 0 | 100          |
|       | 1 | 300          |
|       | 2 | 900          |
|       | 3 | 2700         |

↓ ·3  
↓ ·3  
↓ ·3

Type answer equations into  $y=$  and check which has the right table!

make a table to help you understand →

15 A sequence of blocks is shown in the diagram below.



This sequence can be defined by the recursive function  $a_1 = 1$  and  $a_n = a_{n-1} + n$ . Assuming the pattern continues, how many blocks will there be when  $n = 7$ ?

- (1) 13
- (2) 21
- (3) 28
- (4) 36

16 Mario's \$15,000 car depreciates in value at a rate of 19% per year. The value,  $V$ , after  $t$  years can be modeled by the function  $V = 15,000(0.81)^t$ . Which function is equivalent to the original function?

- (1)  $V = 15,000(0.9)^{9t}$
- (2)  $V = 15,000(0.9)^{2t}$
- (3)  $V = 15,000(0.9)^{\frac{t}{9}}$
- (4)  $V = 15,000(0.9)^{\frac{t}{2}}$

2nd → Graph  
 \* Plug answer choices in calculator and see which table matches with:  
 $y_1 = 15000(0.81)^t$   
 $y_2 = \underline{\hspace{2cm}}$

Use this space for computations.

17 The highest possible grade for a book report is 100. The teacher deducts 10 points for each day the report is late.

Which kind of function describes this situation?

- (1) linear
- (2) quadratic
- (3) exponential growth
- (4) exponential decay

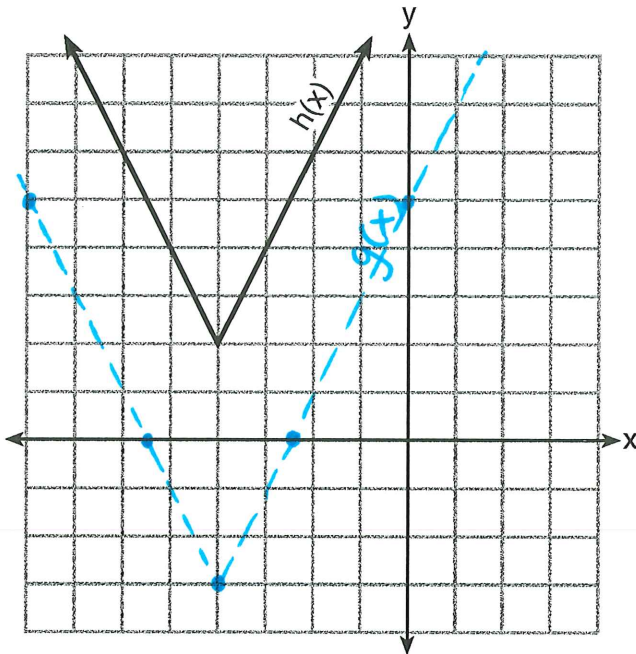
|       |     |       |
|-------|-----|-------|
| Day 0 | 100 | } -10 |
| Day 1 | 90  |       |
| Day 2 | 80  | } -10 |
| Day 3 | 70  |       |

constant rate of change = linear!

18 The function  $h(x)$ , which is graphed below, and the function  $g(x) = 2|x + 4| - 3$  are given.

• type into  $y_1 = 2 \text{abs}(x+4) - 3$

MATH NUM ABS



• Then graph some points onto this grid

• Let's review the statements to see which are true!

Which statements about these functions are true?

- I.  $g(x)$  has a lower minimum value than  $h(x)$ . ✓
- II. For all values of  $x$ ,  $h(x) < g(x)$ . ✗
- III. For any value of  $x$ ,  $g(x) \neq h(x)$ . ✓

- (1) I and II, only
- (2) I and III, only
- (3) II and III, only
- (4) I, II, and III