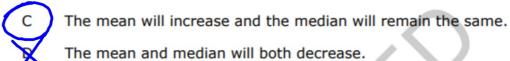# Warm Up   5/23/19

#17-24 on EOC Released Test

17 A set of nine data points is shown below.

| 8, 11, 12, 10, 9, 7, 5, 3, 9 |

Which statement is true if a tenth data point of 45 is added to the data set?

A   The mean and median will both increase.

B   The mean will increase and the median will decrease.

C   The mean will increase and the median will remain the same.

D   The mean and median will both decrease.

18   What is the distance, in units, between the y-intercept of $f(x) = x^2 + 7x - 18$ and the y-intercept of the linear function that passes through the points shown in the table below?

x	g(x)
-5	2
10	11
25	20
60	41

(handwritten annotations)

y-incpt −18

g(x) y-incpt 5

5 − (−18)

23

19 What is the value of x in the equation shown below?

$$2(x + 8) - 4x = 10x + 4$$

$$2x + 16 - 4x = 10x + 4$$

$$-2x + 16 = 10x + 4$$
$$-10x \qquad -10x$$
$$\overline{}$$
$$-12x + 16 = 4$$
$$-16 \quad -16$$
$$\overline{-12x = -12} \quad \boxed{X = 1}$$
$$\overline{-12} \quad \overline{-12}$$

20 This is a paper/pencil copy of an online technology enhanced item.

Three systems of equations are shown in the table below.

Place (click and drag) the choice that describes the number of solutions of each system into the appropriate column in the table below.

$2x + 2y = 16$	$2x + 2y = 8$	$2x + 3y = 12$
$4x + 3y = 27$	$4x + 4y = 16$	$2x + 3y = 18$
1	*∞*	*∅*

one solution	no solution	infinitely many solutions

21 Which equation represents the line that is perpendicular to the graph
    of $4x + 3y = 9$ and passes through $(^-2, 3)$?

    A $3x - 4y = {}^-18$

    B $3x + 4y = 18$

    C $3x - 4y = {}^-6$

    D $3x + 4y = 6$

$$4x + 3y = 9$$
$$-4x \qquad -4x$$
$$\frac{3y}{3} = \frac{-4x}{3} + \frac{9}{3}$$

$$m = \frac{3}{4} \quad (-2, 3) \qquad y = -\frac{4}{3}x + 3$$

$$y - 3 = \frac{3}{4}(x + 2) \qquad (4)y = \frac{3}{4}x + \frac{18(4)}{4}$$

$$y - 3 = \frac{3}{4}x + \frac{6}{4} \qquad 4y = 3x + 18$$
$$\qquad\qquad\qquad\qquad -3x \quad -3x$$
$$+3 \qquad\qquad\qquad +3 \qquad \frac{-3x + 4y}{-1} = \frac{18}{-1}$$

$$y = \frac{3}{4}x + \frac{18}{4} \qquad 3x - 4y = {}^-18$$

22   A club began with 3 members. Each month, each member brought one new
      member. Which function can be used to determine the number of members
      x months after the club began?

      A   f(x) = 2x + 3

      B   f(x) = 3x + 1

      C   f(x) = 1.5(2)^x

      D   f(x) = 3(2)^x

23   Every ten years, the Census counts how many people are living in every town in the United States.

- The 2010 Census showed that 1,000 people were living in Appleville, and 4,000 people were living in Bridgetown.
- The population of Appleville is predicted to double every ten years.
- The population of Bridgetown is predicted to increase by 1,000 every ten years.

If the predictions come true, what will be the first census year that will show Appleville with a larger population than Bridgetown?

Apple
$$y = 1000(2)^x$$

Bridge
$$y = 1000x + 4000$$

*use desmos to compare tables

year 2040

24 Two stores have movies to rent.

- The first store charges a $12.50-per-month membership fee plus $1.50 per movie rented. $y = 1.50x + 12.50$
- The second store has no membership fee but charges $3.50 per movie rented. $y = 3.50x$

What is the minimum number of movies a person would need to rent in a month for the first store to be a better deal?

compare tables or graphed points on desmos

OR

Make a table to compare the y-values for both stores