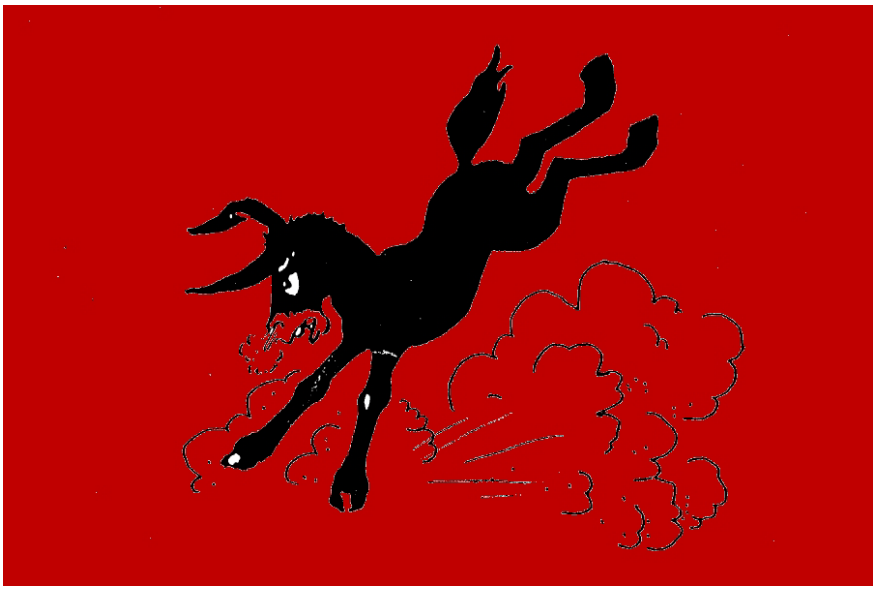
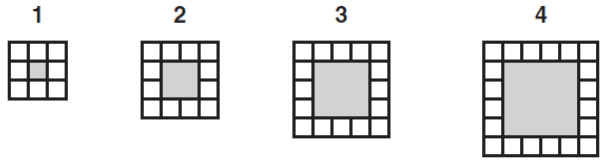
Pre-EOC Assessment

Algebra1 #1

Wahkiakum School District



1. Mrs. Morris gave her students this pattern of white tiles:



She asked her students to write an equation to represent the number of white tiles, *t*, for any figure number, *n*.

Which equation represents the number of white tiles in the pattern?

A $t = n + 2$
B $t = n + 4$
C $t = 4n + 4$
D $t = 4n + 8$

2. The equation $2|x-1|-10=-4$ has two real solutions.

Determine the negative solution of the equation.

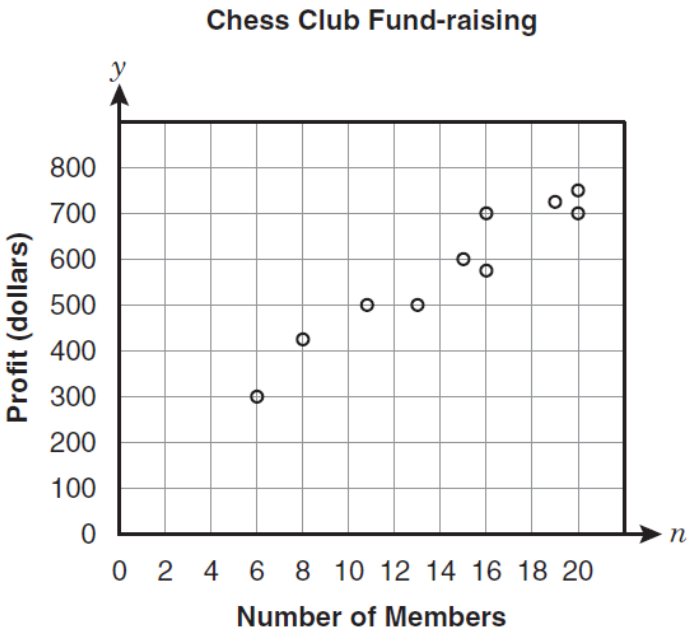
Write your answer on the line.

What is the negative solution of the equation? _____

3. Simplify $\left(x^{\frac{1}{4}}\right)^8 \sqrt[3]{x^3}$. All variables represent nonnegative numbers.

F x^3
G x^4
H $x^2(x)$
J x^6

4. Vance graphed the relation between fund-raising profits for the chess club and the number of members.



Which equation represents a line that fits the data?

A $y = 29n+320$
B $y = 60n+180$
C $y = 23n+180$
D $y = 2003n+320$

5. At a particular company, every employee receives a 4% cost-of-living increase to their salary.

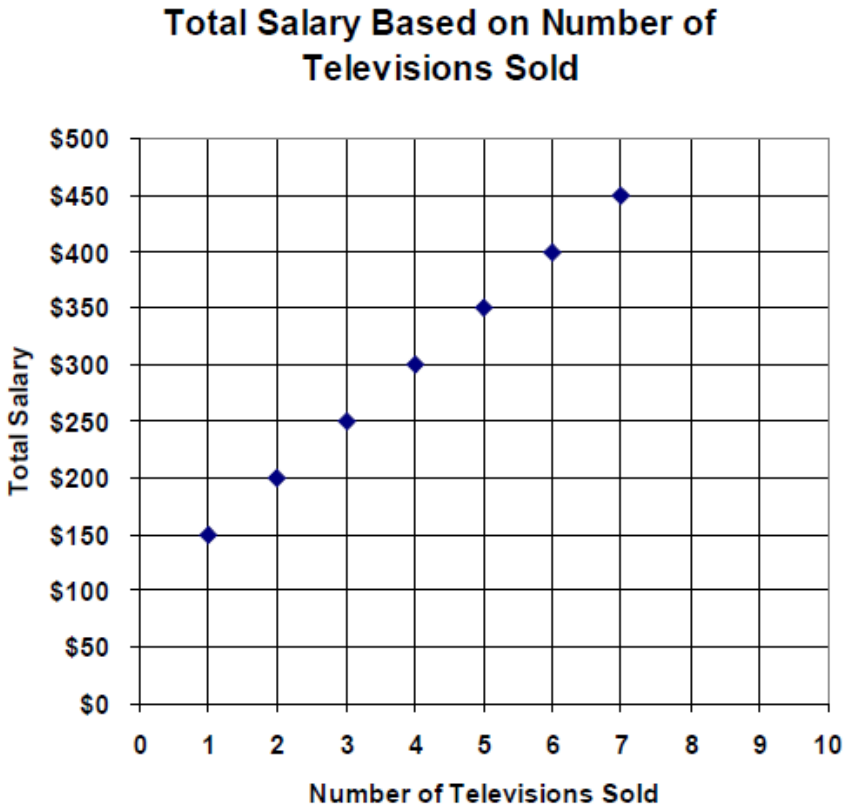
What impact does this cost-of-living increase have on the mean and on the range of employee salaries at the company?

A The mean increases but the range does not change.
B The mean does not change but the range increases.
C The mean and range both increase.
D The mean and range do not change.

6. Which situation is best modeled by the expression $2 + x$?

A Tabitha lost 2 out of her x marbles under the couch.
B Sudhir had $2 and spent x dollars on a hamburger.
C Fatima is 2 years older than her sister Delilah who is x years old.
D Dominic ran the x mile course 2 times.

7. The chart shows the amount of total salary (commission plus base salary) paid to employees of a store that specializes in big screen televisions.



Which equation best represents the total salary (T) that an employee makes for selling any number of television sets (n)?

A $T = 50n + 100$
B $T = 100(n + 50)$
C $T = 100n + 50$
D $T = 50(n + 100)$

8. The time it takes Jarvis to get to school on his bike is $\frac{1}{3}$ of the time it takes to walk. Which equation can be solved to find the time it takes Jarvis to walk to school if he can bike there in 5 minutes?

A $3w = 5$ C $\frac{1}{3}w = 5$

B $w = \frac{1}{3}g5$ D $w - \frac{1}{3} = 5$

9. Which is **NOT** a solution to the inequality $4x - 7 < 5$?

A -2 C 1

B 0 D 3

10. Which function has (0, 7) on its graph?

A $-3x + y = 7$ C $y = 14 - x$

B $y = x - 7$ D $-7x + y = 2$

11. Solve $xy + 7 = n$ for y.

A $y = xn - 7$

B $y = \frac{n-7}{x}$

C $y = x(n - 7)$

D $y = \frac{1}{x}(n + 7)$

12. Which represents the solutions of

$|2x| - 5 < -1$?

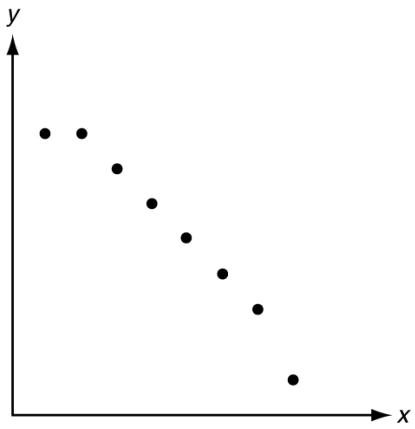
A $x > 2$ OR $x < -2$

B $x > 2$ OR $x > -2$

C $x > -2$ AND $x < 2$

D $x < -2$ AND $x > 2$

13. Which situation best fits the graph below and what type of correlation is it?



A distance traveled vs. cost of gas; negative correlation

B distance traveled vs. cost of gas; positive correlation

C time traveled vs. distance from destination; negative correlation

D time traveled vs. distance from destination; positive correlation

14. A function has x-intercept 3 and y-intercept 2. Which of the functions below could be this function?

A $4 + 3x = 2y$

B $2x - 3y = -6$

C $2y + 3x = 4$

D $3y - 6 = -2x$

15. Which equation describes a line that passes through (7, 1) and is perpendicular to the line described by

$y = -\frac{1}{2}x + 3$?

A $y = 2x - 13$
B $y = 2x - 7$
C $y = 2x - 6$
D $y = 2x + 3$

16. Classify the system $\begin{cases} y = 2x + 3 \\ y = -2x + 3 \end{cases}$.

A inconsistent
B consistent and independent
C inconsistent and dependent
D consistent and dependent

17. Which of the following is **NOT** equivalent to $\left(\frac{x^2y}{4x^5}\right)^{-2}$?

A $\left(\frac{y}{4x^3}\right)^{-2}$
B $\left(\frac{4x^3}{y}\right)^{2}$
C $\left(\frac{16x^5}{y^2}\right)$
D $\left(\frac{4x^5}{x^2y}\right)^{2}$

18. The equation 2y + 3x = -6 describes a line with what slope?

A 3/2 B 0 C 1/2 D -3/2

19. Which point is a solution of $\begin{cases} y - 3x \geq 2 \\ y \leq x + 9 \end{cases}$?

A (–2, 8)
B (–1, 4)
C (4, –1)
D (8, –2)

20. Which equation describes the line with a slope of 5 and containing the point (–2, 4)?

A $y = 5x - 22$ C $y = 5x + 4$
B $y = 5x - 2$ D $y = 5x + 14$

21. The function $f(x) = 10(2)^x$ models an insect population after x weeks. To the nearest whole number, what will the population be after 4 weeks?

A 80 C 20,000
B 160 D 160,000

22. Which value is **Not** represented on a box-and-whisker plot?

A. Mean B. Median C. Quartile D. Range

23. Which of the following relations is NOT a function?

F {(–3, –3), (–2, –2), (–1, –1)}
G {(–4, 2), (–6, 2), (–8, 2)}
H {(5, –1), (5, –2), (5, –3)}
J {(–3, 1), (0, 0), (3, 1)}

24. Which equation is NOT a direct variation?

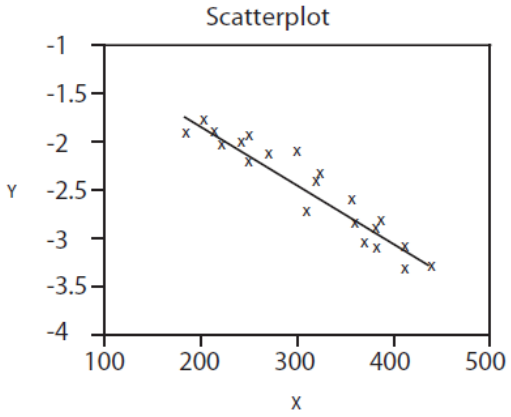
A $y = 50x$ C $-2y = x$
B $5x + 2y = 10$ D $-3x + 2y = 0$

25. Graph A is the graph of y = $2(3)^x$ and graph B is the graph of y = $3(2)^x$

Which statement about the two graphs is true?

A. Both graphs A and B rise at the same rate.
B. Graph B rises at a faster rate than graph A.
C. Graph A rises at a faster rate than graph B.
D. The y-intercept of graph A is above the y-intercept of graph B.

26. Which words – *strong* or *weak*, *positive* or *negative* – could be used to describe the correlation shown in the sample scatterplot below?



Answer _____

27. Which of the following is a geometric sequence?

A. 1/2, 1, 3/2, 2, …
B. -2, -6, -10, -14,…
C. 3, 8, 13, 18,…
D. 5, 10, 20, 40

28. A star's color gives an indication of its temperature and age. The chart shows four types of stars and the lowest temperature of each type.

Type	Lowest Temperature (deg F)	Color
A	1.35×10^4	Blue-White
B	2.08×10^4	Blue
G	9.0×10^4	Yellow
P	4.5×10^4	Blue

List the temperatures in order from lowest to highest.

29. The local minor league baseball team has a salary dispute. Players claim they are Being underpaid, but managers disagree.

    - Bearing in mind that a few top players earn salaries that are quite high, would it be in the managers' best interest to use the mean or median when quoting the "average" salary of the team? Why?

    - What would be in the players' best interest?

30. Only chocolate and vanilla ice cream cones are sold at an ice cream store. In one day, the number of chocolate cones sold was 1 more than 4 times the number of vanilla cones sold. A total of 121 cones were sold that day.

    Let c = the number of chocolate cones sold.
    Let v = the number of vanilla cones sold.

    • Write equations to determine the number of chocolate cones sold that day.
    • Use the equations to determine the number of chocolate cones sold that day.

    Show your work using words, numbers, and/or diagrams.

    How many chocolate cones were sold that day? _____