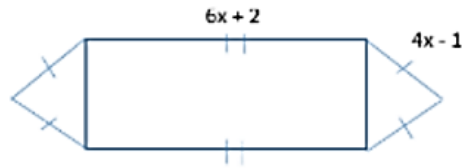
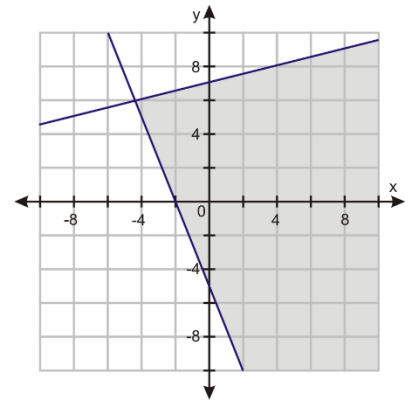


GSE Algebra 1  
Final Exam Review

1. A model of a garden is shown. What is the perimeter of the model, in terms of  $x$ ?



- A.  $10x + 1$       B.  $28x$       C.  $20x + 2$       D.  $28x - 6$
2. Which shows the equation  $A = nz + d$  solved for  $z$ ?
- S.  $z = \frac{A}{nd}$       T.  $z = \frac{A-d}{n}$       U.  $z = \frac{A}{n+d}$       V.  $z = \frac{A}{n-d}$
3. Which of the following is a solution to the system of linear inequalities shown?
- W.  $(-4, 1)$       X.  $(-4, -1)$       Y.  $(4, 1)$       Z.  $(-4, -4)$
4. Simplify the following expression:  $\sqrt{30} \cdot 4\sqrt{2}$
- A.  $8\sqrt{15}$       B.  $8\sqrt{8}$       C.  $2\sqrt{15}$       D.  $6\sqrt{8}$
5. Given  $h(x) = 3x - 7$ , find the value of  $h(2)$ .
- A.  $h(2) = 13$       B.  $h(2) = -6$       C.  $h(2) = -2$       D.  $h(2) = -1$
6. Determine the zeroes ( $x$ -intercepts) of the function  $x^2 - 4x - 32 = 0$
- S.  $\{8, -4\}$       T.  $\{-8, 4\}$       U.  $\{8, 4\}$       V.  $\{-8, -4\}$
7. Simplify  $(12p^2 + 15p + 3) - (2p^2 + 17p - 2)$ .
- O.  $10p^2 - 2p + 5$       P.  $10p^2 + 2p - 5$       Q.  $10p^2 - 2p + 1$       R.  $10p^4 - 2p^2 + 5$
8. Find the vertex and axis of symmetry of the quadratic function.  $f(x) = 3(x - 1)^2 + 4$
- O.  $(-1, -4)$  &  $x = -1$       P.  $(3, 4)$  &  $x = 3$       Q.  $(1, -4)$  &  $x = 1$       R.  $(1, 4)$  &  $x = 1$
9. Find the solution to the system  $\begin{cases} 2x + y = 7 \\ 3x - 4y = 5 \end{cases}$ .
- H.  $(-1, 9)$       I.  $(3, 1)$       J. Infinite Solutions      K. No Solution
10. Complete the square for the expression  $x^2 - 12x + \underline{\hspace{1cm}}$ . What is the result as a binomial squared?
- L.  $(x + 6)^2$       M.  $(x - 6)^2$       N.  $(x - 12)^2$       O.  $(x + 36)^2$



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11. What is the product of  $2x - 6$  and  $x + 11$ ?  
A.  $x^2 - 66x + 16$     B.  $x^2 + 16x + 11$     C.  $2x^2 + 16x - 66$     D.  $2x^2 + 11x - 66$
12. On average, the human eye is said to blink 17 times per minute. Determine how many times (on average) the human eye blinks in one day.  
L. 408 blinks/day    M. 1,020 blinks/day    N. 24,480 blinks/day    O. 1,468,800 blinks/day

The number of t-shirts produced by a factory is given by the expression  $120x + 200$  where the variable  $x$  represents the number of hours that the factory has been open.

13. What is the meaning of the constant in the expression?  
S. The factory produces 200 t-shirts every hour  
T. The factory produces 120 t-shirts every hour  
U. The factory started the day with 200 t-shirts produced  
V. The factory started the day with 120 t-shirts produced
14. What is the meaning of the coefficient in the expression?  
E. The factory produces 120 t-shirts every hour  
F. The factory produces 200 t-shirts every hour  
G. The factory started the day with 120 t-shirts produced  
H. The factory started the day with 200 t-shirts produced

15. Which function represents the data in the table?

x	1	4	7	8
y	2.25	3	3.75	4

- H.  $y = \frac{x}{4} + 2$     I.  $y = 2x - 5$     J.  $y = \frac{3x}{4} + 2$     K.  $y = \frac{x}{4} - 1$

16. Several input- and output- values of the quadratic function  $g(x)$  on the interval  $[5, 11]$  are displayed below.

x	5	6	7	8	9	10	11
y	22	23	22	19	14	7	-2

Which represents the average rate of change of  $g(x)$  on the interval  $[6, 11]$ ?

- E. -6    F. -5    G. -4    H. -3

17. Susie has a love of animals and is studying whether or not the age of a chicken has an effect on the number of eggs it produces. She constructed a scatter plot with her data and determined a line of best fit. The correlation coefficient was found to be  $-0.712$ . Which of the following conclusions could Susie make from her data?  
W. As the chicken ages, the number of eggs it produces decreases.  
X. As the chicken ages, the number of eggs it produces remains roughly the same  
Y. As the chicken ages, the number of eggs it produces increases  
Z. As the chicken ages, the number of eggs it produces increase and then decreases

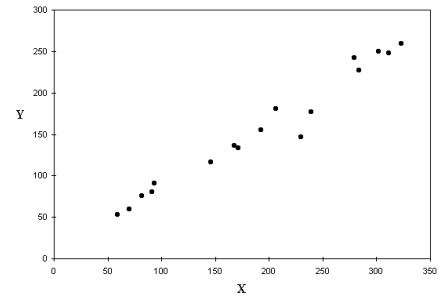
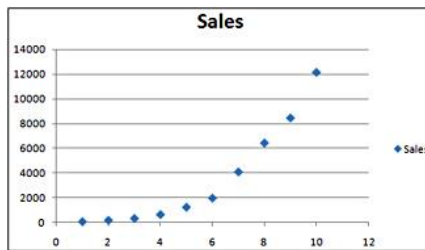
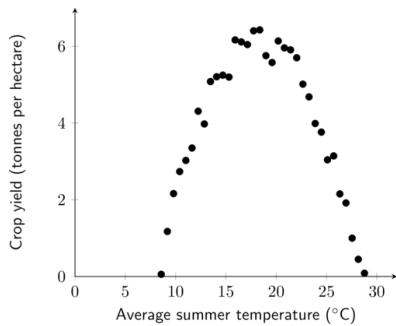
GSE Algebra 1  
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18. Which of the following equations represents a parabola that reaches its minimum at (2, 14)?

- L.  $y = (x - 2)^2 + 14$
- M.  $y = (x + 2)^2 - 14$
- N.  $y = -(x - 2)^2 + 14$
- O.  $y = -(x + 2)^2 - 14$

19. Given the function  $g(x) = 3 \cdot 2^x - 1$ , what is the value of  $g(4)$ ? \_\_\_\_\_

20. Determine whether the following represent quadratic, exponential, or linear functions.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

21. The function  $f(x) = x - 3$  is shifted 4 units left and 5 units up. Write the equation of the new function. \_\_\_\_\_

22. Define the following number sets and give examples of each.

Number Set	Definition	Examples
Natural Numbers		
Integers		
Rational Numbers		
Irrational Numbers		

