

Algebra 1 Honors Practice EOC Chapters 1,4,7

Read each problem carefully. Solve and check. You will need a sheet of graph paper to graph the functions. You may use a 4 function FCAT calculator and the Algebra 1 reference sheet.

1. Evaluate the expression. $[15 + (5^2 \cdot 2)] \div (-13)$
2. Evaluate the expression when $m=5$ and $n=3$; $\frac{2m - n}{m^2 - 2n + 2}$
3. Write and solve the following equation or inequality.
The product of 5 and the sum of a number n and 7 is less than the quotient of the number n and 2.
4. Evaluate the expression. $5 - 3[4^2 - 3^3] - 2^5$
5. Mr. Stubbs wants to record the baseball games and plans to spend at most \$800 on a video recorder and video tapes. He plans to buy the camera for \$695 and tapes for \$5.75 each. How many tapes can he buy?
6. At a yard sale, you find a number of paperback books by your favorite author. You have \$10 and each book is priced at \$.75. Write a rule for the amount of money you have left as a function of the number of books you buy. Find the slope of the function.
7. Using the function $y = \frac{1}{3}x - 1$ identify the range of the function if the Domain: 12,15,21,30.
8. Graph the function $y = \frac{1}{2}x - 1$ with domain -4, -2, 0, 2, 4. Then perform the transformation $(x,y) \rightarrow (x,y + 3)$ and graph the image. Identify the domain and range of the function represented by the image.
9. Suppose the graph of $y = -3$ has the domain $x \geq 0$.
Classify the function as discrete or continuous.
10. Find the x-intercept and the y-intercept of the graph of the function $6x-4y=12$.
11. Identify the slope and y-intercept of the equation of the line $\frac{2}{3}x - \frac{1}{4}y = 12$.
12. The number of tickets sold s (in millions) to a Florida theme park can be modeled by the function $s = 14.7t + 411.6$ where t is the number of years since 2000. Approximate the year when the total number of tickets sold will be 600 million.
13. Does the equation $4x-3y=0$ represent direct variation. If so, identify the constant of variation.
14. Given that y varies directly with x , write a direct variation equation that relates x and y when $x = -8, y = 5$.

15. Your family and a friend's family are going on vacation. The amount of fuel remaining in your family's car after driving m miles is given by the equation $a = -0.03m + 12$ because it has a 12-gallon fuel tank and uses 0.03 gallon of fuel per mile driven. The amount of fuel remaining in your friend's van is given by the equation $a = -0.08m + 22$. Graph both equations and use the graphs to find the difference of the amount of fuel remaining in the two fuel tanks after driving 100 miles.
16. Solve the linear system using substitution $4x + 5y = 18$
 $3x - 9y = -12$
17. Solve the linear system using elimination $\frac{2}{5}x - \frac{1}{3}y = 1$
 $\frac{3}{5}x + \frac{2}{3}y = 5$
18. A restaurant owner wants to add imitation maple syrup that costs \$4.00 per liter to 50 liters of pure maple syrup that costs \$9.50 per liter. How many liters of imitation maple syrup should be added to make a mixture that costs \$5.00 per liter?
19. Flying with the wind, a pilot travels 600 miles between two cities in four hours. The return trip into the wind takes five hours. The speed of the wind remains constant during the trip. Find the speed of the wind.
20. Solve the system $0.2x - 0.6y = 0.6$
 $0.4x - 1.2y = 2.4$
21. Graph the system of linear inequalities $x - y \leq 3$
 $y \leq -x + 2$
22. A website that sells songs for downloading increased its price per song from \$0.99 to \$1.29. Macy spent \$15.36 downloading songs during the month of the price increase. She downloaded 4 more songs at \$0.99 than at \$1.29. The set of equations below represents the situation where x is the number of songs Mac downloaded at \$0.99 and y is the number of songs she downloaded at \$1.29.
 $x = y + 4$
 $0.99x + 1.29y = 15.36$
What is the exact number of songs Macy downloaded at the \$0.99 price?
23. An architect designed an outdoor staircase for a house. The relationship between the height of the steps and the length of the tread is modeled by the equation $57x - 95y = 0$. Which of the following represents the slope of the equation?
24. On Monday, you paid \$8.77 for 4 cups of coffee and 7 bagels. On Wednesday, they paid \$15.80 for 8 cups of coffee and 14 bagels. Can you determine the cost of each bagel? Explain.
25. Write the equation of a line that passes through the point $X(-10,5)$ and is perpendicular to the line that passes through the points $A(-2,3)$ and $B(3,-5)$. Find the x intercept of the perpendicular line.

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Answer sheet

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