Name Kelly Hour _____ **Math 1A Practice Final (Multiple Choice)**

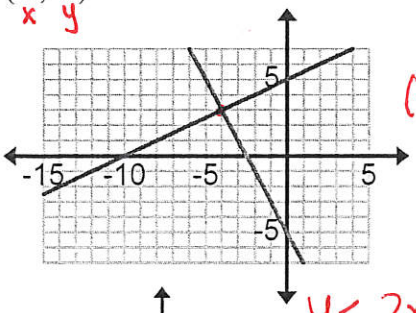
1. Which of the following points represents a solution to the equation $y = 5x - 8$?

$-5 = 0-8$ $-3 = 5-8$ $5 = 0-8$ $-6 = 5-8$

a. (0, -5) b. (1, -3) c. (2, 5) d. (-1, -6)

x y x y x y x y

2. What is the solution of the system of equations graphed?

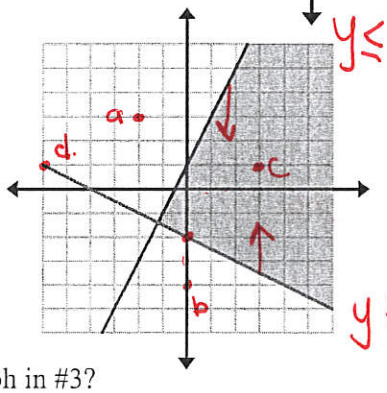


(-4, 3)

a. (-10, 0) b. (0, 5)

c. (3, -4) d. (-4, 3)

3. Find the system of inequalities graphed on this graph.



$y \leq 2x+1$

$y \geq -\frac{1}{2}x-2$

a. $y < 2x+1, y > -\frac{1}{2}x-2$

b. $y \leq -\frac{1}{2}x+1, y \geq 2x-2$

c. $y < -2x-1, y > \frac{1}{2}x+2$

d. $y \leq 2x+1, y \geq -\frac{1}{2}x-2$

4. Which of the following would be a solution to the graph in #3?

a. (-2, 3) b. (0, -4) c. (3, 1) d. (-6, 1)

5. Which of the following sets of data represents a function?

a. {(2, -3), (4, 6), (6, -3)} b. {(2, 1), (2, 2), (3, 4)}

x's don't repeat

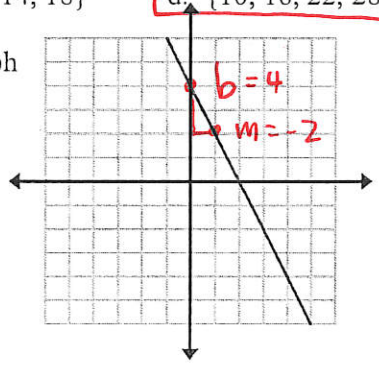
c. {(-3, 2), (6, 4), (-3, 1)} d. {(5, 5), (5, 6), (5, 7)}

6. Write the first four terms for the sequence of this function: $y = 6x + 4$.

x=1: 10 x=2: 16 x=3: 22 x=4: 28

a. {4, 10, 16, 22} b. {4, 6, 10, 16} c. {6, 10, 14, 18} d. {10, 16, 22, 28}

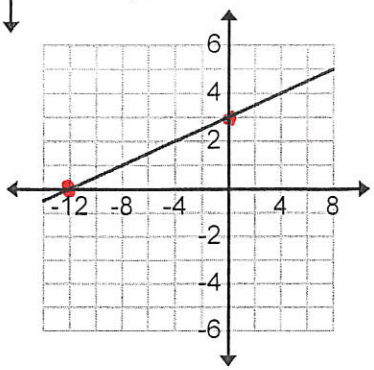
7. Using the slope and the y-intercept, find the function of this graph



a. $f(x) = 2x+4$ b. $f(x) = -2x+4$

c. $f(x) = \frac{1}{2}x+2$ d. $f(x) = -\frac{1}{2}x+2$

8. Using the x-intercept and the y-intercept, find the equation of this graph.



a. $-x + 4y = 12$ b. $4x - y = 12$

c. $x - 4y = 12$ d. $-4x + y = 12$

x	y
-12	0
0	3

9. If f(x) = 5x – 3 and g(x) = 2x + 8, find (f – g)(x). $5x-3-(2x+8)$ $= 3x-11$

a. 7x + 5 b. 3x + 11 c. -3x + 5 d. 3x – 11

10. If f(x) = 5x + 1 and g(x) = 3x – 2, find (f + g)(x). $5x+1+(3x-2)$ $8x-1$

a. 15x + 1 b. 8x – 1 c. 15x – 9 d. 2x + 3

11. On day 0, your bank account has $4. Every day after that it increases by $0.25. Choose the correct explicit formula.

a. f(x) = 4 + 0.25x b. f(x) = 4 + 0.25(x – 1) c. f(x) = 0.25 + 4x d. f(x) = 0.25 + 4(x – 1)

12. For the sequence:

x=1  x=2  x=3 

a. y = x + 3
b. y = 3x
c. y = 3x + 1
d. y = 3x – 1

13. Write a recursive formula for the sequence: 81, 78, 75, … $d=-3$ $a_1=81$

a. $a_1 = 81, a_n = a_{n-1} - 3$ b. $a_1 = 81, a_n = a_{n-1} + 3$
c. $a_1 = 81, a_n = -3a_{n-1}$ d. $a_1 = 81, a_n = 3a_{n-1}$

14. In solving this equation, at what step was there a mistake made:

a. 6(x – 2) = 30
b. 6x + 12 = 30 $6x-12=30\ldots$
c. 6x = 18
d. x = 3

15. What would be the first step to solve this equation? $-2 = \frac{10+x}{32}$

a. add 2 to both sides b. multiply both sides by 10
c. multiply both sides by 32 d. subtract 10 from both sides

16. Solve $3 - |-4n| = -17$

$-3 \quad -3$

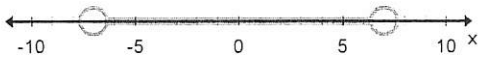
$\frac{-1}{-1}|-4n| = \frac{-20}{-1}$ $|-4n| = 20$

$\frac{-4n}{-4} = \frac{20}{4}$ $n = -5$

$\frac{-4n}{-4} = \frac{-20}{-4}$ $n = 5$

a. n = -5 b. n = 5 c. n = -5, 5 d. n = -5, 10

17. What inequality is graphed?



a. $|x| \geq -7$ b. $|x| > 7$ c. $|x| \leq 7$ d. $|x| < 7$

18. Solve the formula for h: $2A = \frac{(a+b)h}{2}$

$\frac{2A}{(a+b)} = \frac{(a+b)h}{(a+b)}$ $h = \frac{2A}{a+b}$

a. $h = \frac{2A}{(a+b)}$ b. $h = \frac{2(a+b)}{A}$ c. $h = \frac{A}{2(a+b)}$ d. $2A = bh$

19. Solve the system of equations: $4x - 3y = 22$
$+ \quad x + 3y = 13$

$5x = 35$
$x = 7$

$7 + 3y = 13$
$3y = 6$
$y = 2$

a. (2, 7) b. (-2, -7) c. (-7, -2) d. (7, 2)

20. Adult tickets for the school musical sold for \$7 and student tickets sold for \$4. One hundred forty-two tickets were sold for \$709. How many of each kind of ticket were sold?

x = # ad tix
y = # kid tix

$7x + 4y = 709$
$-4(x + y = 142)$
$+ \quad -4x - 4y = -568$
$3x = 141 \quad x = 47$

$142 - 47 = 95$

47 adult tix
95 kid tix

a. 105 adults and 47 students
b. 47 adults and 95 students
c. 95 adults and 47 students
d. 95 adults and 105 students

21. Which of the following linear equations would be parallel to the equation $3x + y = 5$?

$y = -3x + 5$

a. $y = -3x - 6$ b. $3x + y = 5$ c. $y = 3x + 6$ d. $3x - y = -5$

22. Which of the following linear equations would be perpendicular to the equation $3x + y = 5$?

$y = -3x + 5$, $y = \frac{1}{3}x + B$

a. $y = -3x - 6$ b. $\frac{1}{3}x - y = 5$ c. $y = 3x + 6$ d. $\frac{1}{3}x + y = -5$

$y = \frac{1}{3}x - 5$ $-\frac{1}{3}x$

Name KEY Hour_____

Math 1 Honors A Practice Final

Read each question. Show all your work.

1. A student is 5 ft 4 in tall. What would be the student's height in meters? Use the fact that 1 m ≈ 3.28 ft.

5 ft 4 in 4/12 = 1/3 ft $5\frac{1}{3}$ ft · $\frac{1\text{m}}{3.28\text{ ft}}$ ≈ 1.63m

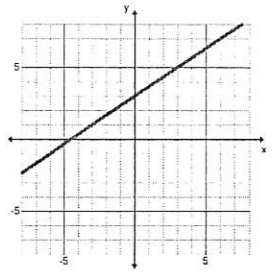
2. Which is the simplified form of the expression? $4(r+8)-\frac{1}{3}(6r-15)$

$4r+32-2r+5 = 2r+37$

3. If $f(x)=\frac{1}{4}x+\frac{5}{8}$, what is f(16)?

$\frac{1}{4}(16)+\frac{5}{8} = 4+\frac{5}{8} = \frac{32}{8}+\frac{5}{8} = \frac{37}{8}$ or $4\frac{5}{8}$ or 4.625

4. Which function rule is graphed below?



$f(x)=\frac{2}{3}x+3$

5. Solve C = 2πr for r.

$\frac{C}{2\pi} = \frac{2\pi r}{2\pi}$

$r=\frac{C}{2\pi}$

6. Given the set of ordered pairs, which rule represents the function?
(0,5), (1,8), (2,11), (3,14), (4,17)

$f(x)=3x+5$

7. Mandy works part-time to earn money for a trip. The amount she saves after working x hours is given by the equation y = 10x + 15. How much does Mandy earn per hour?

$10.00

8. Express the following sentence in equation form.
Three times the sum of a number and 4 is equal to the product of the same number and 4.

$3(x+4)=4x$

9. What is the solution of the proportion $\frac{2}{5}=\frac{x}{6}$?

$\frac{12}{5}=\frac{5x}{5}$ $x=\frac{12}{5}$, $2\frac{2}{5}$ or 2.4

10. At which point do the graphs of the equations intersect?

$\begin{cases} y = 2x + 1 \\ y = x + 7 \end{cases}$

(6, 13)

11. Solve the inequality $-3 \leq 4x + 5 \leq 7$?

$-5 \quad -5 \quad -5$

$-8 \leq 4x \leq 2$

$\frac{-8}{4} \leq \frac{4x}{4} \leq \frac{2}{4}$

$-2 \leq x \leq \frac{1}{2}$

12. Solve the equation: $3(x - 5) + 10 = 4$

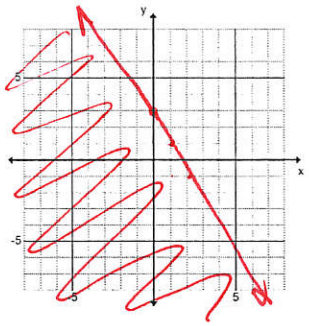
$3x - 15 + 10 = 4$

$+15 \quad -10$

$3x = 9$

$x = 3$

13. Graph the inequality $4x + 2y \leq 6$?



$2y \leq -4x + 6$

$y \leq -2x + 3$

14. What is the solution to the system of equations? $\begin{cases} y = 3x \\ x + y = -32 \end{cases}$

(-8, -24)

$x + 3x = -32$

$4x = -32$

$x = -8$

$y = 3(-8) = -24$

15. You buy x pounds of strawberries for \$3.49/lb. Write a function rule for the amount of change C you receive from a \$20.

$C(x) = 20 - 3.49x$

16. What function does the table represent?

x	-2	-1	0	1	2
y	3	2	1	0	-1

$f(x) = -x + 1$

17. What is the value of the function $f(x) = \frac{1}{2}(-3x) + 2$ when $x = \frac{1}{4}$?

$\frac{1}{2}\left(-3\left(\frac{1}{4}\right)\right) + 2$

$-\frac{3}{8} + \frac{16}{8} = \frac{13}{8}$ or $1\frac{5}{8}$ or 1.625

18. A puddle is 0.07 m deep after 1 h and 0.02 m deep after 5 h. At what rate is the level of the water changing?

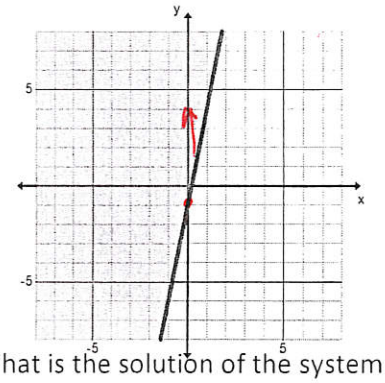
(1, .07)
(5, .02)

$\frac{.02-.07}{5-1} = \frac{-0.05}{4} =$ **-0.0125 m/hr**

19. How does the graph of y = 5x +4 differ from that of y = 5x?

translated up 4

20. What is the inequality for the graph below?



$y \geq 5x - 1$

21. What is the solution of the system of equations?

$\begin{cases} -15x - 6y = 18 \\ 3x + 6y = 6 \end{cases}$

$-12x = 24$
$x = -2$

$-6 + 6y = 6$
$6y = 12$
$y = 2$

(-2, 2)

22. What is the value of x? $\frac{1}{10}(1.5x - 3.4) = 0.11$

$.15x - .34 = .11$
$.15x = .45$

$x = 3$

23. Write an explicit formula for the arithmetic sequence. $\frac{1}{2}, 1, \frac{3}{2}, 2, \frac{5}{2}, \ldots$ $d = \frac{1}{2}$ $a_1 = \frac{1}{2}$

$a(n) = \frac{1}{2} + (n-1)(\frac{1}{2})$ or $y = \frac{1}{2}x$

24. A cell phone plan cost $40 per month plus 3 cents for each minute of use. Write a function for the cost of the plan. What are the domain and range of the function?

$C = 40 + .3m$

D: $m \geq 0$
R: $C \geq 40$

25. Consider this system of equations. $\begin{cases} 7x + 3y = 16 \\ 9x - 21y = 24 \end{cases}$

Solve both equations for y. What can you say about the graphs of these equations?

$3y = -7x + 16$ $y = -\frac{7}{3}x + \frac{16}{3}$

$\frac{-21y}{-21} = \frac{-9x + 24}{-21}$ $y = \frac{3}{7}x - \frac{8}{7}$

$y = \frac{9}{21}x - \frac{24}{21}$ ↑

perpendicular