

Read each question carefully. You must show all of your work in order to earn full credit. Partial credit will be awarded for legible mathematically-correct progress even when the final answer is not correct. Circle your final answers for 11-25. Print letter answers NEATLY for 1-10 (if I can't read it, you don't get credit).

Part I (1 point each)

*note that some answer choices will not be used at all, but none will be used more than once

___ 1. multiplicative inverse

___ 2. midpoint formula

___ 3. point-slope formula

___ 4. y-intercept

___ 5. vertical line

___ 6. distance formula

___ 7. linear function

___ 8. slope

___ 9. slope-intercept formula

___ 10. horizontal line

A. $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

B. $y = c$

C. $\frac{x_2-x_1}{y_2-y_1}$

D. $f(x) = mx + b$

E. 1

F. $-a$

G. $y - y_1 = m(x - x_1)$

H. $y = mx + b$

I. $1/a$

J. $a(b + c) = ab + ac$

K. $x = c$

L. $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

M. $(0, b)$

N. $\frac{y_2-y_1}{x_2-x_1}$

Part II (6 points each)

11. Solve. Write the solution set in interval notation. $2x + 4 \geq 5$ and $1 < 5 - x$

12. Solve for x . $2[4 + 2(5 - x) - 2x] = 4x - 7$

13. State whether the each of the following relations is a function (yes or no).

a. $\{(-3, -1), (-1, -1), (0, 1), (2, 6)\}$

b. $\{(0, 0), (1, 0), (2, 0), (3, 0), (4, 0)\}$

c. $\{(3, 1), (3, 2), (3, 3), (3, 4)\}$

d. $\{(1, 3), (3, 5), (5, 7), (7, 9)\}$

14. Evaluate $H(-3)$, given that $H(p) = \frac{3p}{p+2}$.

15. Find the distance between the points $P_1(3, -5)$ and $P_2(6, 0)$.

16. Find the midpoint of the line segment between the points $P_1(-3, 5)$ and $P_2(2, -4)$.

17. What values are excluded from the domain of the function?

a. $g(x) = 3x + 2$

b. $G(x) = \frac{2}{x-2}$

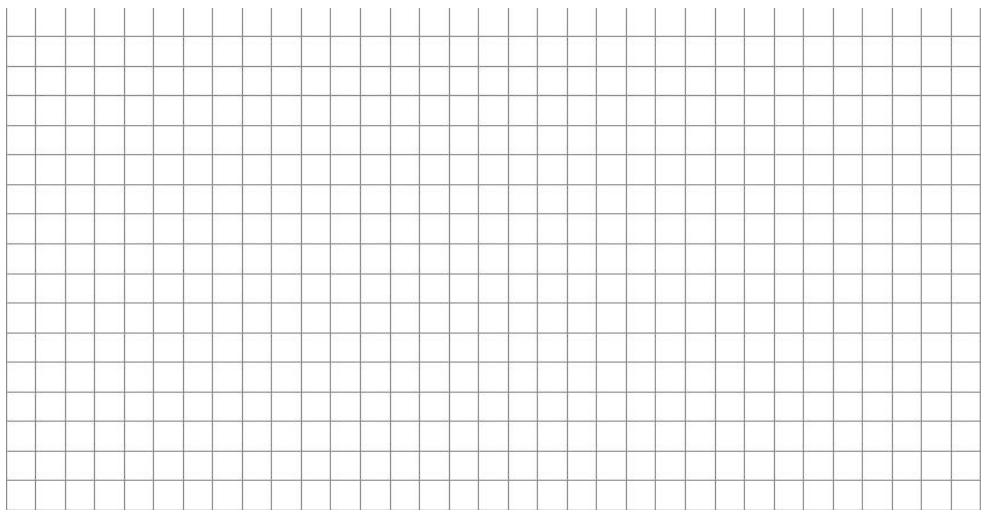
c. $f(x) = \frac{3-5x}{5}$

d. $H(x) = \frac{3-x}{6-x}$

18. State the domain of the function $F(x) = \frac{x-2}{x+2}$ in interval notation.

19. Find the range of the function $f(x) = 2 - 3x - x^2$, where the domain is restricted to the set $\{-5,0,5\}$.

20. Graph the linear function $2x - 3y = 8$. Include labels on axes to indicate your scale.



21. Find the x- and y-intercepts of the function $3x - 5y = 9$.

x-intercept:

y-intercept:

22. Find the slope of the line containing the points $(-2, -5)$ and $(-4, -1)$.

23. Find the equation of the line that has an undefined slope and passes through the point $(-5, -1)$.

24. Find the equation of the line that contains the points $(2,1)$ and $(-2, -3)$.

25. Find the equation of the line that is perpendicular to the line $2x + 4y = -1$ and passes through the point $(-1,3)$.