Algebra 1a Midterm

Show all work for full credit. Do NOT write on this test. Show all work on separate sheet.

Test taking tip: skip problems that are too hard or take too much time, do them later.

Read the instructions for each problem carefully.

PRACTICE TEST

Solve the equation.

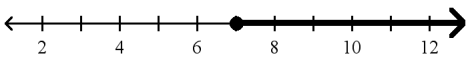
1. $\frac{m+6}{3} = -10$
   a. $m = -12$
   b. $m = -36$
   c. $m = 36$
   d. $m = -48$
2. $58 = -2v - 7v - 5$
   a. $v = -7$
   b. $v = -32$
   c. $v = -9$
   d. $v = 7$
3. $-9a - 3a - 6 = 9a + 8$
   a. $a = \frac{2}{3}$
   b. $a = -\frac{2}{3}$
   c. $a = \frac{3}{2}$
   d. $a = -\frac{3}{2}$
4. $16 = -4(-y + 2)$
   a. $y = -6$
   b. $y = 2$
   c. $y = -2$
   d. $y = 6$
5. $20(5 - x) + 9x = 12$
   a. $x = 3$
   b. $x = 8$
   c. $x = -3$
   d. $x = -10.2$

Solve the equation. Determine whether the equation has *one solution*, *no solution*, or *infinitely many solutions*.

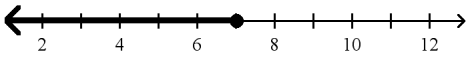
6. $4u + 15 = 19 + 5u$
   a. $u = -4$; one solution
   b. infinitely many solutions
   c. $u = 0$; one solution
   d. no solution
7. $-7(-4k - 5) = 35 + 28k$
   a. $k = -\frac{5}{7}$; one solution
   b. infinitely many solutions
   c. no solution
   d. $k = \frac{5}{4}$; one solution
8. $2z - 12 = -5 + 2z$
   a. no solution
   b. $z = 0$; one solution
   c. infinitely many solutions
   d. $z = 3$; one solution

Solve the inequality. Graph the solution.

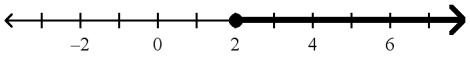
9. $10b + 25 \le 45$
   a. $b \ge 7$



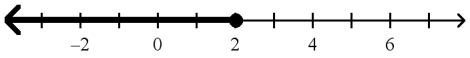
   b. $b \le 7$



   c. $b \ge 2$



   d. $b \le 2$



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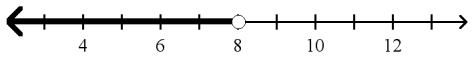
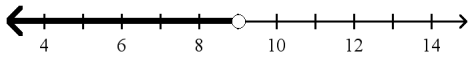
10. $9x - 2x + 3 > 29 + 30$

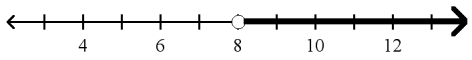
a. $x < 8$



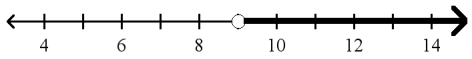
b. $x < 9$



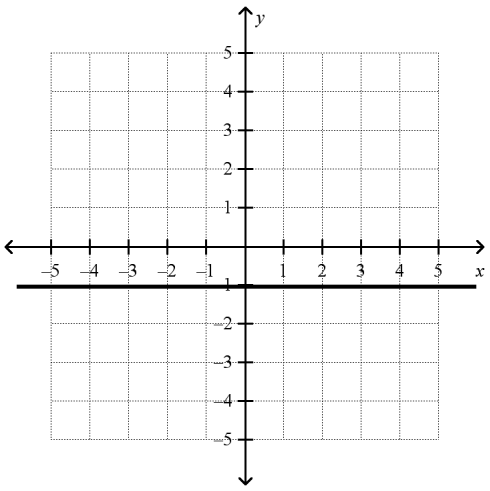
c. $x > 8$



d. $x > 9$



11. Match the graph with the function



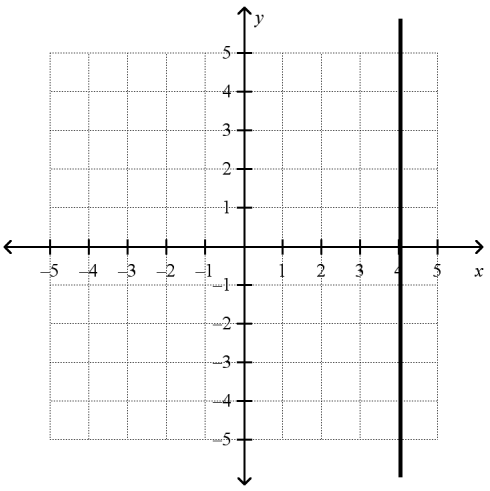
a. $x = -1$

b. $f(x) = -1$

c. $f(x) = -1x$

d. $x = -1y$

12. Match the graph with the function



a. $f(x) = 4$

b. $x = 4$

c. $f(x) = 4x$

d. $x = 4y$

Algebra 1a Midterm

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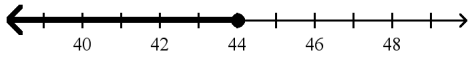
Read the instructions for each problem carefully.

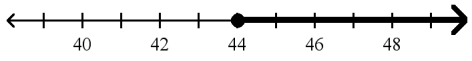
Solve the given inequality. Graph the solution set on a number line.

13. $1 + \frac{p}{4} \geq 10$

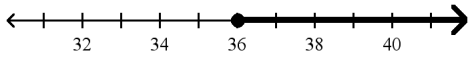
a. $p \leq 44$



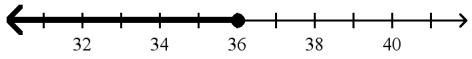
b. $p \geq 44$



c. $p \geq 36$

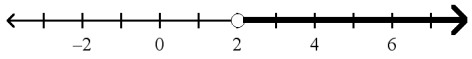


d. $p \leq 36$

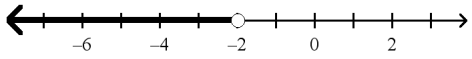


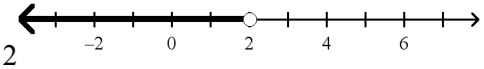
14. $12 - 8n + 9n < 5 + 5$

a. $n > 2$



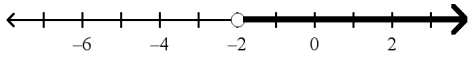
b. $n < -2$





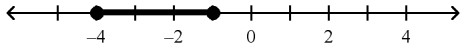
c. $n < 2$

d. $n > -2$

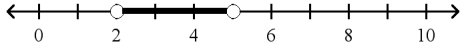


15. $-1 < x - 3 < 2$

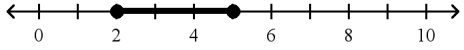
a. $-4 < x < -1$



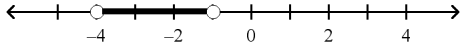
b. $2 < x < 5$



c. $2 < x < 5$

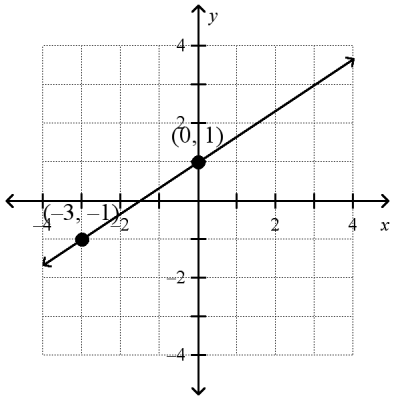


d. $-4 < x < -1$



Describe the slope of the line. Then find the slope.

16.



a. negative; $-\frac{3}{2}$

b. positive; $\frac{2}{3}$

c. positive; $\frac{3}{2}$

d. negative; $-\frac{2}{3}$

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Read the instructions for each problem carefully.

Find the value of *x* so that the function has the given value.

17. $n(x) = 6x + 5; \quad n(x) = 35$

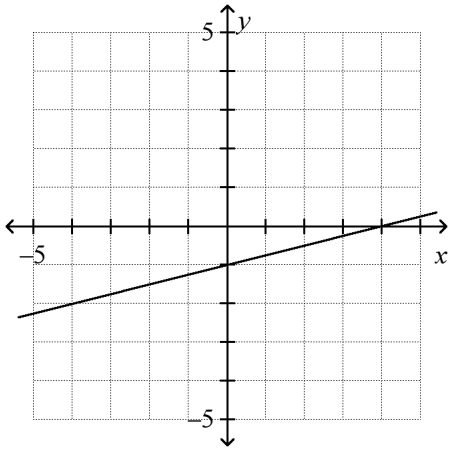
a. -5

b. 215

c. 5

d. -215

18. Match the graph with the function below



a. $g(x) = \frac{2}{3}x - 1$

b. $g(x) = 2x + 4$

c. $g(x) = \frac{1}{4}x - 1$

d. $g(x) = \frac{3}{4}x$

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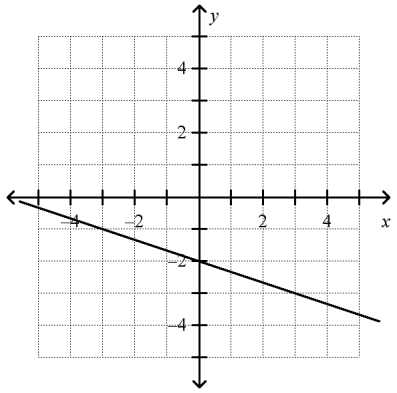
Match the function below with its corresponding graph or value.

SHOW ALL WORK FOR FULL CREDIT.

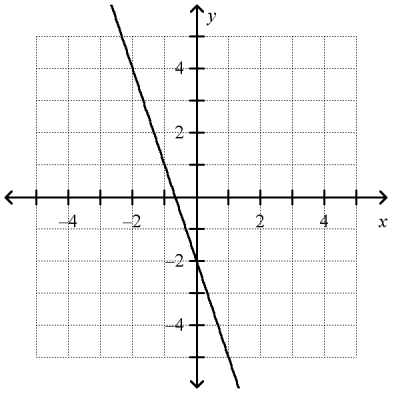
a.



b. $f(7) = 6$

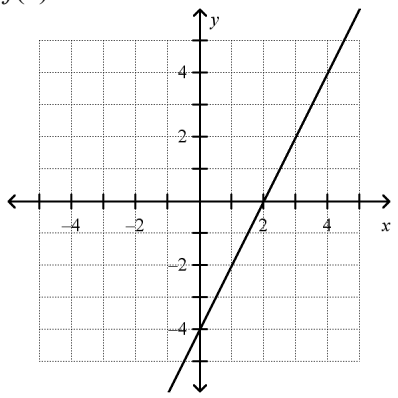
c. $f(5) = 25$

d.



e. $f(x) = 3$ when $x = -2$.

f.



19. $f(x) = 5x$

20. $f(x) = 2 + x - 3$

21. $f(x) = -\frac{1}{3}x - 2$

22. $f(x) = -4 + 2x$

Match the equation below with its first step in solving for the variable. Use each step only once.

a. Add a constant to each side.
b. Multiply each side by a constant.
c. Use the Distributive Property .
d. Combine like terms.

23. $\frac{x+9}{9} = -1$

24. $-5(t-7) - 7\left(t - \frac{5}{8}\right) = 5$

25. $-2 = \frac{m}{-3} - 3$

26. $-\frac{2}{3}z - \frac{7}{9}z + 5 = 2$

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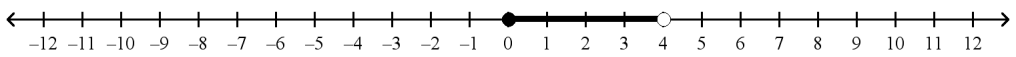
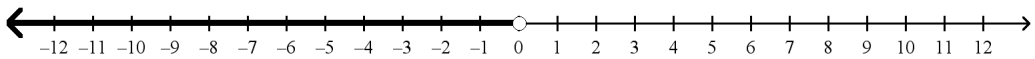
27. $m - 1 < 3$ and $m + 2 \geq 2$

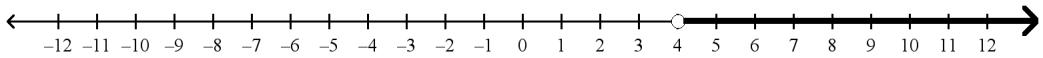
a. $\{m \mid 0 \leq m < 4\}$



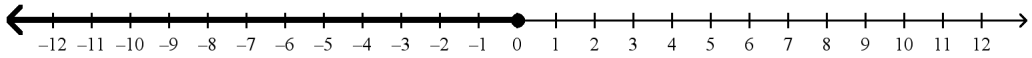
b. $\{m \mid m < 0\}$



c. $\{m \mid m > 4\}$

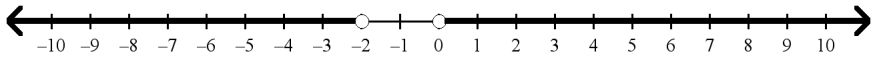


d. $\{m \mid m \leq 0\}$

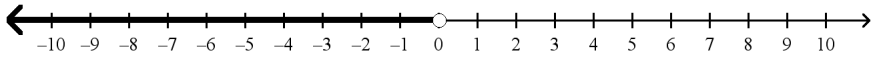


28. $p + 5 < 3$ or $p + 1 > 1$

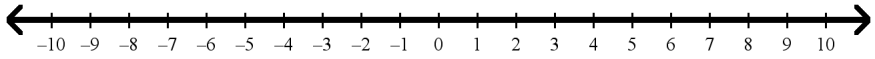
a. $p < -2$ or $p > 0$



b. $p < 0$



c. p could be any number



d. $p > -2$