

QUIZZZ

Algebra 1 Midterm Review Guide

48 Questions

NAME : _____

CLASS : _____

DATE : _____

1. What is the first step to solving this equation: $x + 26 = -42$

- a) subtract 26 from both sides
- c) subtract 42 from both sides

- b) add 26 to both sides
- d) add 42 to both sides

$$\begin{array}{r} x + 26 = -42 \\ -26 \quad -26 \\ \hline x = -68 \end{array}$$

2.

$$p = \frac{w}{a}$$

Solve for a.

- a) $a = pw$
- c) $a = w/p$

- b) $a = p/w$
- d) $a = w + p$

$$\begin{array}{l} a(p) = \left(\frac{w}{a}\right) \frac{a}{1} \\ \frac{ap}{p} = \frac{w}{p} \\ a = \frac{w}{p} \end{array}$$

3. Simplify each equation. Tell whether the equation has one, no, or infinite solutions.

$$3x - 8 = 3(x - 4) + 1$$

- a) one
- c) infinite solutions

1st Distribute
2nd Combine like terms
3rd Move x term with ±

$$\begin{array}{l} 3x - 8 = 3(x - 4) + 1 \\ \text{distribute} \\ 3x - 8 = 3x - 12 + 1 \end{array}$$

if there was x = #

if a true statement
 $-8 = -8$

Simplify each equation. Tell whether the equation has one, no, or infinite solutions.

$$3x - 7 = 3(x - 3) + 2$$

- a) one
- c) infinite solutions

- b) no solutions

$$\begin{array}{l} 3x - 7 = 3x - 11 \\ -3x \quad -3x \\ \hline -7 = -11 \text{ False} \\ \text{No solution} \end{array}$$

Help

$$-7 = -7 \text{ True}$$

~~11.~~ $(5x^2 - 3x - 1) - (2x^2 + x - 7)$ Simplify.

a) $3x^2 - 4x + 6$

b) $7x^2 - 4x + 6$

c) $10x^4 - 3x^2 + 7$

d) $7x^2 - 2x - 8$

12. Which expression represents "7 more than five times a number"?

a) $7+5x$

c) $7(x+5)$

b) $5(x+7)$

d) $5x+7$

$+7$
 $5 \cdot$
no "is" inequality >
 $5x + 7$
5 times the sum of x and 7
Seven times the sum of x and 5

13. Consider the expression $3n^2 + n + 2$. What are the coefficients?

a) 1

c) 3

b) 2

d) 4

14. Consider the expression $3n^2 + n + 2$. What is the constant?

a) 1

c) 3

b) 2

d) 4

15. Consider the expression $3n^2 + n + 2$. How many terms are there?

a) 1

c) 3

b) 2

d) 4

Terms are separated by + or -

16. Simplify by combining like terms:

$5a + 2b - 3a + 4$
 a) $8a + 2b + 4$

b) $2a + 2b + 4$

c) $8ab$

d) $4ab + 4$

$2a + 2b + 4$

17. Solve for v. $8v - 4(v + 8) = 8$

a) 2

b) 10

c) 4

d) -4

$8v - 4v - 32 = 8$

$4v - 32 = 8$

$+32 +32$

$4v = 40$

$\frac{4v}{4} = \frac{40}{4}$

$v = 10$

1st Distribute to get rid of Parentheses

2nd Combine like terms

3rd Undo =

4th Undo =

18. Solve for x. $3x + 2(4x - 4) = 3$

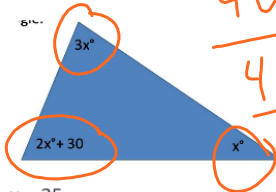
a) 4

b) 3

c) 2

d) 1

19. The sum of the angles is 180° . Find the value of x



$angle + angle + angle = 180$

$3x + 1x + 2x + 30 = 180$

$6x + 30 = 180$

$-30 -30$

$\frac{6x}{6} = \frac{150}{6}$

$x = 25$

a) $x = 25$

b) $x = 5$

c) $x = 35$

d) $x = 6$

20. $14 < -2a + 6 - 2a$

a) $a > -2$

b) $a < -2$

c) $a > 2$

d) $a < 2$

$14 < -4a + 6$
 $-6 -6$

$8 < -4a$

$\frac{8}{-4} < \frac{-4a}{-4}$

$-2 > a$

rewrite $a < -2$

21. $|x - 2| = -5$

a) $x = -3, x = 7$

b) No Solution

c) Infinitely Many Solutions

d) $x = -7, x = 3$

you divided by a negative number!
 Flip Sign

no flip if
 • or ÷ by a positive #

Mark Pointy Side, Keep expression on that side when you rewrite it

21. $|x - 2| = -5$
 absolute value is distance from 0, always comes at positive

22. What is the absolute value of $|-26|$.

- a) 26
- b) -26
- c) 0
- d) -20

Get absolute value bars alone

23. $|v+8| - 5 = 2$

- a) $\{-1, -15\}$
- b) $\{-1, -5\}$
- c) $\{-15, 15\}$
- d) No Solution

$|v+8| = 7$

Case 1
 $v+8 = -7$
 $-8 \quad -8$
 $v = -15$

Case 2
 $v+8 = 7$
 $-8 \quad -8$
 $v = -1$

24. $|2x+9| = 15$

- a) $x = 3$
- b) $x = 3$
 $x = -6$
- c) $x = 3$
 $x = -12$
- d) $x = 6$
 $x = -12$

Case 1
 $2x+9 = 15$

Case 2
 $2x+9 = -15$

25. $-2|-2r-4| = -12$

- a) $\{5, 1\}$
- b) $\{-5, -1\}$
- c) $\{-5, 1\}$
- d) No Solution

$|-2r-4| = 6$

$-2r-4 = 6$

$-2r-4 = -6$

2 cases = Positive = negative

26. Write the sentence as an inequality.

The sum of twice a number y and 4 is at most 20.

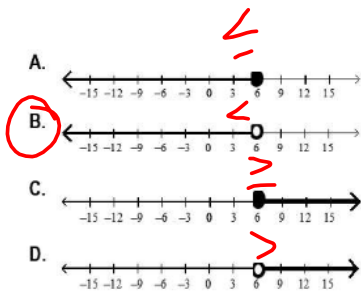
- a) $2y + 4 \leq 20$
- b) $2y + 4 \geq 20$
- c) $\frac{y}{2} + 4 \leq 20$

27. Write the sentence as an inequality.

The temperature t is at least 59°

- a) $t \geq 59^\circ$
- b) $t \leq 59^\circ$

33.

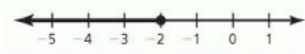


Pick the correct letter for:

$6 > x$ *rewrite so x is on the left*
 $x < 6$

- a) A b) B
 c) C d) D

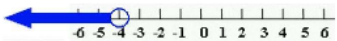
34.



Match the graph with its inequality.

- a) $b > -2$ b) $b < -2$
 c) $b \geq -2$ d) $b \leq -2$

35.



What inequality does the number line graph represent?

- a) $x \leq -4$ b) $x \geq -4$
 c) $x < -4$ d) $x < 4$

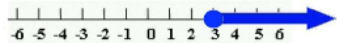
36. What are two numbers that could be x in $x < 8$?

- a) 8.6, 7.9 b) 11, 16
 c) 0.8, 5.9 d) 12, 7.1

37. Would you use a closed or open circle to graph $x < 3$?

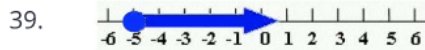
- a) Closed b) Open

38.



What inequality does the number line graph represent?

- a) $x \geq 3$ b) $x > 3$
 c) $x < -3$ d) $x \leq 3$



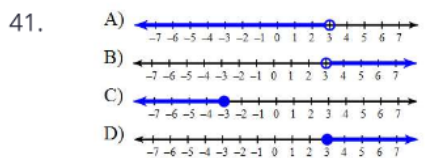
What inequality does the number line graph represent?

- a) $x > 5$
- b) $x < -5$
- c) $x \geq 5$
- d) $x \geq -5$



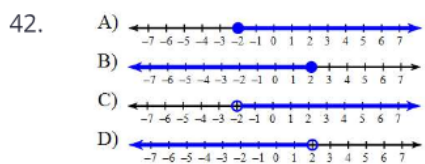
What inequality does the number line graph represent?

- a) $x \leq -4$
- b) $x \geq -4$
- c) $x < -4$
- d) $x < 4$



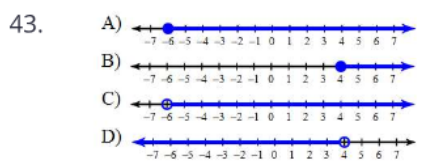
Which graph matches the inequality $k < 3$?

- a) A
- b) B
- c) C
- d) D



Which graph matches the inequality $2 > p$?

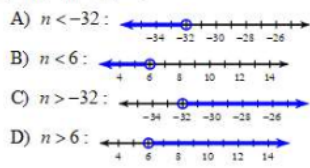
- a) A
- b) B
- c) C
- d) D



Which graph matches the inequality $r \geq -6$?

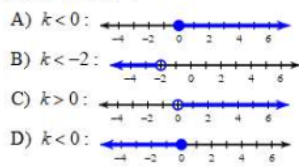
- a) A
- b) B
- c) C
- d) D

44. 1) $16 + 4n < 7n - 2$ Solve and graph the inequality.



- a) A
- b) B
- c) C
- d) D

45. 2) $5k + 7 < 7k + 7$ Solve and graph the inequality.



- a) A
- b) B
- c) C
- d) D

46. Is $x = 9$ a solution to the given inequality.
 $x > 9$

- a) TRUE
- b) FALSE

47. Is $x = 12$ a given solution to the inequality.
 $x > 5$

- a) TRUE
- b) FALSE

48. Is the following item an expression, equation, or inequality.
 $13 + 6$

- a) Expression
- b) Equation
- c) Inequality

Answer Key

- | | | | |
|---------|---------|-------|-------|
| 1. a | 13. a,c | 25. c | 37. b |
| 2. c | 14. b | 26. a | 38. a |
| 3. b | 15. c | 27. a | 39. d |
| 4. c | 16. b | 28. a | 40. c |
| 5. a | 17. b | 29. a | 41. a |
| 6. b | 18. d | 30. a | 42. d |
| 7. a | 19. a | 31. a | 43. a |
| 8. d | 20. b | 32. a | 44. d |
| 9. a | 21. b | 33. b | 45. c |
| 10. b | 22. a | 34. d | 46. b |
| 11. a | 23. a | 35. c | 47. a |
| 12. a,d | 24. c | 36. c | 48. a |