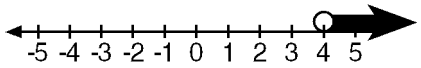
Name: _____
CC Algebra

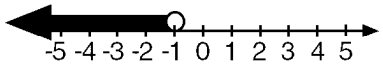
Solving Inequalities Practice

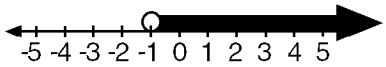
___ 1) What interval notation represents the data graphed below?

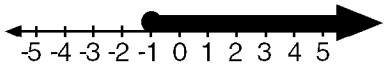


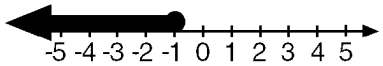
A) (4,∞]
B) (4,∞)
C) (∞,4)
D) (∞,4]

___ 2) Which of the following graphs represents the set of real numbers less than -1?

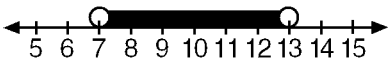
A)


B)


C)


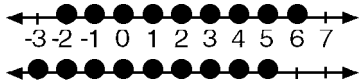
D)


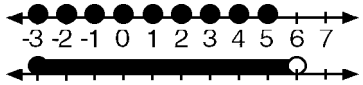
___ 3) The graph below represents which of the following inequalities?

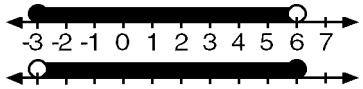


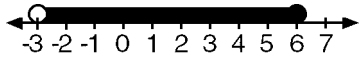
A) $7 \leq x \leq 13$
B) $7 < x < 13$
C) $7 < x \leq 13$
D) $7 \leq x < 13$

___ 4) Which of the following graphs represents the set of real numbers between -3 and 6 (including -3)?

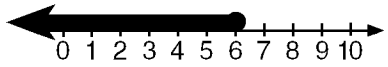
A)


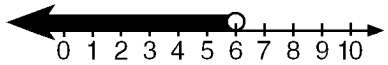
B)


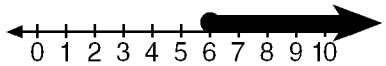
C)


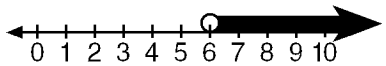
D)


___ 5) Which of the following is the graph of the solution set for $-3x + 16 \geq -2$?

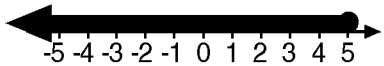
A)


B)


C)


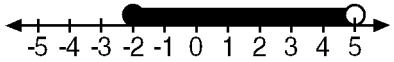
D)


___ 6) Which inequality *best* describes the graph below?



A) $-6x < 30$
B) $-6x > 30$
C) $-6x \leq -30$
D) $-6x \geq -30$

___ 7) What interval notation represents the data graphed below?



A) (-2,5)
B) [-2,5)
C) (-2,5]
D) [-2,5]

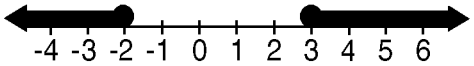
___ 8) What is the solution to the inequality $\frac{7 - 2x}{5} < 9$?

A) $x < 52$
B) $x > 26$
C) $\varnothing$
D) $x > -19$

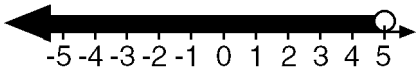
Questions 9 through 12 refer to the following:

Express the given number line in interval notation:

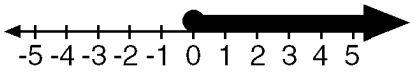
___ 9)



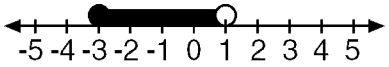
___ 10)



___ 11)



___ 12)



Questions 13 through 16 refer to the following:

Solve and graph the solution set for the given inequality in the domain of the set of real numbers:

___ 13) $-3 \geq -4x - 3$

___ 14) $8x - 7 < 3x + 8$

___ 15) $2 - 2x \leq 11 + x$

___ 16) $3(3x - 5) \geq -6x$

Questions 17 through 20 refer to the following:

Solve and graph the solution set for the given inequality in the domain of the set of real numbers:

___ 17) $-3 \leq x + 3 < 4$

___ 18) $x + 4 > 5$ or $x + 4 < -2$

___ 19) $2 < 3x + 2 < 14$

___ 20) $-15 < 5x - 5 \leq 5$

___ 21) Marc is 15 years older than Shannon. The sum of their ages is less than 26 years. Which inequality can be used to find the ages of each in years?

A) $x + x + 15 < 26$
B) $x + 15 < 26$
C) $x + x + 15 > 26$
D) $x + 15 - x < 26$

___ 22) Ms. Grayson has budgeted $6,500 for a computer lab in her school. Each new computer costs $750, and each new computer table costs $60. If Ms. Grayson buys 8 new computers, which inequality can be used to find t, the number of new tables she can buy?

A) $750 + 60t \leq 6{,}500$
B) $60t \leq 6{,}500$
C) $8(750) + 60t \leq 6{,}500$
D) $8(750 + 60)t \leq 6{,}500$

___ 23) Ken has $264 in his bank account. He needs to deposit enough money to make his car payment of $189 and still have *at least* $150 left in the account. Which inequality describes d, the amount of money Ken needs to deposit?

A) $264 + 189 + d \geq 150$
B) $d - 189 \geq 150$
C) $d(264 - 189) \geq 150$
D) $264 - 189 + d \geq 150$

___ 24) Lucas wants to buy some amusement ride tickets that sell for $1.35 each. If he also wants to buy a soda for $1.50, what is the most number of tickets he can buy if he only has $23.00 in his pocket?

___ 25) The proper ratio for a cleaning solution calls for one part detergent to five parts water. What is the *smallest* integral amount of detergent needed to make a solution of *at least* 17 liters?

1) B 2) A 3) B 4) C 5) A

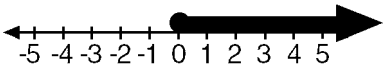
6) D 7) B 8) D

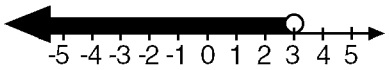
9) $(-\infty,-2] \cup [3,\infty)$

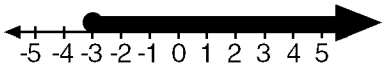
10) $(-\infty,5)$

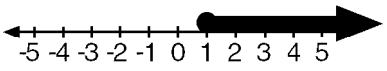
11) $[0,\infty)$

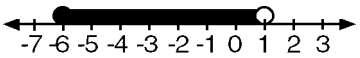
12) $[-3,1)$

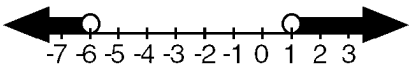
13) $x \geq 0$, 

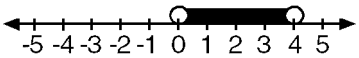
14) $x < 3$, 

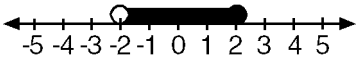
15) $x \geq -3$, 

16) $x \geq 1$, 

17) $-6 \leq x < 1$, 

18) $x > 1$ or $x < -6$, 

19) $0 < x < 4$, 

20) $-2 < x \leq 2$, 

21) A 22) C 23) D

24) $1.35x + 1.5 \leq 23$

25) $x + 5x \geq 17$