Name: Answer Key Date: 11/16

Inequalities Test Review (Math 7+)

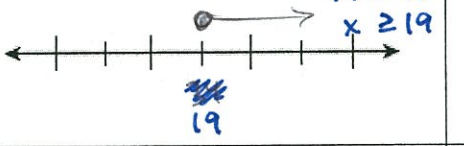
Write an inequality for each situation described below.

1. Today's attendance (a) will be at least 250 people. $a \geq 250$
2. Last weekend, there were more than 75 birds (b) in the sanctuary. $b > 75$
3. Each prize (p) is worth over $150. $p > 150$
4. Is -1 a solution to the following inequality: $-5x + 3 < 38$? $-5(-1)+3 < 38$ yes
5. Is 3 a solution to the following inequality: $2x - 5 \geq 1$? $2(3)-5 \geq 1$ yes

Solve and graph each of the following inequalities.

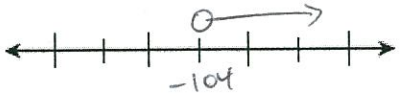
6. $5 \leq \frac{-9+x}{2}$ · 2

$10 \leq -9 + x$
$+9 \quad +9$
$19 \leq x$
$x \geq 19$



7. $\frac{k}{-8} < 13$ · -8

$k > -104$

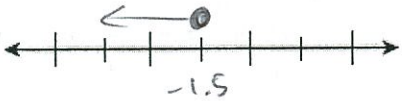


8. $-8.7 \leq -2g + (-4.9)$

$-8.7 \leq -2g - 4.9$
$+4.9 \quad +4.9$
$-3.8 \leq -2g$
$\frac{-3.8}{-2} \leq \frac{-2g}{-2}$
$1.9 \geq g$
$g \leq 1.9$

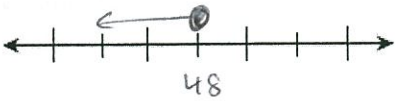
9. $3.3 + 3.2n \leq -1.5$

$-3.3 \quad -3.3$
$\frac{3.2n}{3.2} \leq \frac{-4.8}{3.2}$
$n \leq -1.5$



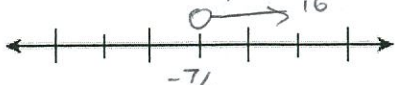
10. $-10 \geq -18 + \frac{m}{6}$

$+18 \quad +18$
$8 \geq \frac{m}{6}$ · 6
$48 \geq m$
$m \leq 48$



11. $-\frac{4}{5} + 8r > -4\frac{3}{10}$

$10\left(-\frac{4}{5} + 8r > \frac{-43}{10}\right)$
$-8 + 80r > -43$
$+8 \quad +8$
$\frac{80r}{80} > \frac{-35}{80}$
$r > \frac{-7}{16}$

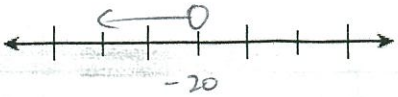


12. $4g + 50 \geq -2(5g + 10)$

$4g + 50 \geq -10g - 20$
$+10g \quad +10g$
$14g + 50 \geq -20$
$-50 \quad -50$
$\frac{14g}{14} \geq \frac{-70}{14}$
$g \geq -5$

13. $12 + \frac{a}{-4} - 19 > -2$

$\frac{a}{-4} - 7 > -2$
$+7 \quad +7$
$-4 \cdot \frac{a}{-4} > 5 \cdot -4$
$a < -20$



14. $-3(k - 5) \leq -2k - 42$

$-3k + 15 \leq -2k - 42$
$+3k \quad +3k$
$15 \leq k - 42$
$+42 \quad +42$
$57 \leq k$
$k \geq 57$

Define a Variable (V), Write an Inequality (I), Solve (S), and graph each Inequality to represent the solution set.

15. Negative eight plus four times a number is greater than negative 64. What is the solution set for this number?

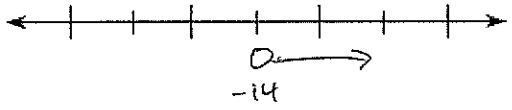
V: x = a number

I: $-8 + 4x > -64$

$+8 \quad +8$

$\frac{4x}{4} > \frac{-56}{4}$

S: $x > -14$



16. A ride at an amusement park requires a height of at least 48 inches. Your little brother is 37 inches tall. What is the solution set for how many more inches must he grow in order to go on the ride?

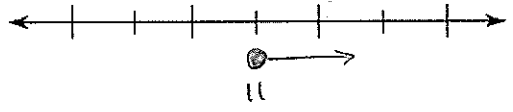
V: x = inches

I: $x + 37 \geq 48$

$-37 \quad -37$

$x \geq 11$

S: $x \geq 11$ inches



17. The difference of four times a number and -8 is greater than -120. What is the solution set for the number?

V: x = a number

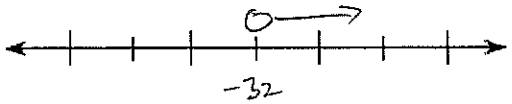
I: $4x - (-8) > -120$

$4x + 8 > -120$

$-8 \quad -8$

$\frac{4x}{4} > \frac{-128}{4}$

S: $x > -32$



18. Your mom gave you $25 to go to the movies. You spend $8 on your ticket and $5 on a small bag of popcorn. You want to spend the rest of your money on boxes of candy to share with your friends. If each box of candy costs $3, what solution set represents the number of boxes of candy you can buy?

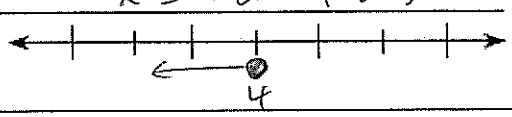
V: c = # of candy boxes

I: $3x + 8 + 5 \leq 25$

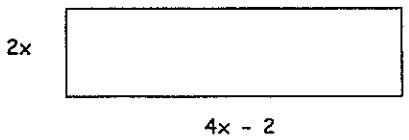
$3x + 13 \leq 25$

$3x \leq 12$

S: $x \leq 4$ candy bars



19. What must the value of x be so that the perimeter of the rectangle is at least 44 cm?



V: x = a number

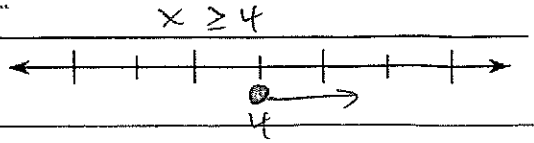
I: $2x + 2x + (4x - 2) + (4x - 2) \geq 44$

$12x - 4 \geq 44$

$+4 \quad +4$

$\frac{12x}{12} \geq \frac{48}{12}$

S: $x \geq 4$



20. Sondra has $207 to spend on new school clothes. First, she purchased a pair of shoes for $45. The store was charging $18 for all shirts, pants, and other items of clothing. What solution represents the number of items of clothing that she can purchase?

V: x = # of clothing items

I: $18x + 45 \leq 207$

$-45 \quad -45$

$\frac{18x}{18} \leq \frac{162}{18}$

S: $x \leq 9$ items