Warm Up October 6

1. The Fairy Tale Spectacular is coming to town. Admission to the fair costs $32.50 and each ride costs $0.80. You have $50 to spend at the Fairy Tale Spectacular including admission.

Part A: Write an inequality that represents this situation.

$32.50 + .80r \le 50$

Part B: Solve the inequality to determine the maximum number of rides you can enjoy at the Fairy Tale Spectacular?

$\cancel{32.50} + .80r \le 50$
$-\cancel{32.50} \quad -32.50$

$\frac{.80r}{.80} \le \frac{17.5}{.80}$

$r \le 21.875$

$r \le 21$ rides

Part C How much money will you have left if you went on 21 rides

$32.50 + .8(21) =$
$32.50 + 16.80$
$\$49.30$ Going on 21 rides

$\$50 - \$49.30 = \$.70$
To Take home

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on Webs

Solve each inequality and graph the solutions.

1. $2x > 4x - 6$
2. $7y + 1 \le y - 5$
3. $27x + 33 > 58x - 29$
4. $-3r < 10 - r$
5. $5c - 4 > 8c + 2$
6. $4.5x - 3.8 \ge 1.5x - 2.3$
7. **School** The school band will sell pizzas to raise money for new uniforms. The supplier charges $100 plus $4 per pizza. If the band members sell the pizzas for $7 each, how many pizzas will they have to sell to make a profit?

Solve each inequality and graph the solutions.

8. $5(4 + x) \le 3(2 + x)$
9. $-4(3 - p) > 5(p + 1)$
10. $2(6 - x) < 4x$
11. $4x > 3(7 - x)$
12. $\frac{1}{2}f + \frac{3}{4} \ge \frac{1}{4}f$
13. $-36.72 + 5.65t < 0.25t$

Solve each inequality.

14. $2(x - 2) \le -2(1 - x)$
15. $4(y + 1) < 4y + 2$
16. $4v + 1 < 4v - 7$
17. $b - 4 \ge b - 6$
18. $3(x - 5) > 3x$
19. $2k + 7 \ge 2(k + 14)$

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1. $2x > 4x - 6$

$-4x \quad -4x$

$\frac{-2x}{-2} > \frac{-6}{-2}$

$x < 3$

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2. $7y + 1 \le y - 5$

$-y \quad -y$

$6y + 1 \le -5$

$-1 \quad -1$

$\frac{6y}{6} \le \frac{-6}{6}$

$\boxed{y \le -1}$

$y \le -1$

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3) $27x + 33 > 58x - 29$

$-27x \quad -27x$

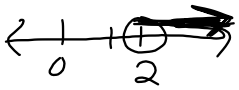
$33 > 31x - 29$

$+29 \quad +29$

$\frac{62}{31} > \frac{31x}{31}$

$2 > x$

$\boxed{x < 2}$



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4) $-3r < 10 - r$

$+r \quad +r$

$\frac{-2r}{-2} < \frac{10}{-2}$

$\boxed{r > -5}$

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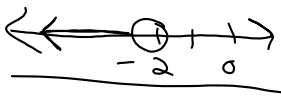
5 $5c - 4 > 8c + 2$
$-5c \qquad -5c$

$-4 > 3c + 2$
$-2 \qquad -2$

$\frac{-6}{3} > \frac{3c}{3}$

$-2 > c$

$\boxed{c < -2}$



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6) $4.5x - 3.8 \geq 1.5x - 2.3$
$-1.5x \qquad -1.5x$

$3.8 - 2.3 = 1.5$

$3x - 3.8 \geq -2.3$
$+3.8 \qquad +3.8$

$\frac{3x}{3} \geq \frac{-1.5}{3}$

$\boxed{x \geq -.5}$

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7. **School** The school band will sell pizzas to raise money for new uniforms. The supplier charges \$100 plus \$4 per pizza. If the band members sell the pizzas for \$7 each, how many pizzas will they have to sell to make a profit?

$100 + 4p < 7p$
$-4p \qquad -4p$

$\frac{100}{3} < \frac{3p}{3}$

$33.3 < p$

34 pizza pies

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8. $5(4 + x) \leq 3(2 + x)$

$20 + 5x \leq 6 + 3x$
$-3x \qquad -3x$

$20 + 2x \leq 6$
$-20 \qquad -20$

$\frac{2x}{2} \leq \frac{-14}{2}$

$\boxed{x \leq -7}$

9. $-4(3 - p) > 5(p + 1)$

$-12 + 4p > 5p + 5$
$-4p \qquad -4p$

$-12 > p + 5$
$-5 \qquad -5$

$\boxed{-17 > p}$

$\boxed{p < -17}$

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10. $2(6 - x) < 4x$

$12 - 2x < 4x$
$+2x \qquad +2x$

$\frac{12}{6} < \frac{6x}{6}$

$\boxed{2 < x}$
$\boxed{x > 2}$

11. $4x > 3(7 - x)$

$4x > 21 - 3x$
$+3x \qquad +3x$

$\frac{7x}{7} > \frac{21}{7}$

$\boxed{x > 3}$

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12. $\frac{1}{2}f + \frac{3}{4} \geq \frac{1}{4}f$

$4\left(\frac{1}{2}f + \frac{3}{4} \geq \frac{1}{4}f\right)$

LCM Least Common multiple

$2f + 3 \geq f$
$-2f \qquad -2f$

$3 \geq -f$

$-3 \leq f$

$\boxed{f \geq -3}$

13. $-36.72 + 5.65t < 0.25t$
$-5.65t \qquad -5.65t$

$\frac{-36.72}{-5.4} < \frac{-5.4t}{-5.4}$

$\boxed{6.8 > t}$

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14. $2(x-2) \le -2(1-x)$ **15.** $4(y+1) < 4y+2$

17. $b-4 \ge b-6$ **18.** $3(x-5) > 3x$

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$x = 5$ Solution

$5 = 7$ No Solution

$2x+3 = 2x+3$ Identity

or

Infinely many solutions

$x > 5$ Solution

$5 > 7$ No Solution

$5 < 7$ I M S

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14. $2(x-2) \le -2(1-x)$ **15.** $4(y+1) < 4y+2$

17. $b-4 \ge b-6$ **18.** $3(x-5) > 3x$

14) $\cancel{2x} - 4 \le -2 + \cancel{2x}$

Identity

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Compound Inequalities

WORDS	ALGEBRA	GRAPH
All real numbers greater than 2 AND less than 6	$x > 2$ AND $x < 6$ $2 < x < 6$	0 2 4 6 8
All real numbers greater than or equal to 2 AND less than or equal to 6	$x \ge 2$ AND $x \le 6$ $2 \le x \le 6$	0 2 4 6 8
All real numbers less than 2 OR greater than 6	$x < 2$ OR $x > 6$	0 2 4 6 8
All real numbers less than or equal to 2 OR greater than or equal to 6	$x \le 2$ OR $x \ge 6$	0 2 4 6 8

$x > 2$ and $x < 6$

0 . 2 3 4 5 6

$2 < x < 6$

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$4 \le x + 2 \le 8$

$4 \le x + 2 \le 8$

No word (and/or)

It's an and

$4 \le x + 2$ and $x + 2 \le 8$

$-2 \quad -2 \qquad -2 \quad -2$

$2 \le x$ and $x \le 6$

$2 \le x \le 6$

0 6

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$-5 \le 2x+3 < 9$

$-5 \le 2x+3 < 9$

$-5 \le 2x+3$ and $2x+3 < 9$

$-3 \quad -3 \qquad -3 \quad -3$

$\frac{-8}{2} \le \frac{2x}{2} \qquad \frac{2x}{2} < \frac{6}{2}$

$-4 \le x$ and $x < 3$

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Solve each compound inequality and graph the solutions.

2a. $-9 < x - 10 < -5$ **2b.** $-4 \le 3n + 5 < 11$

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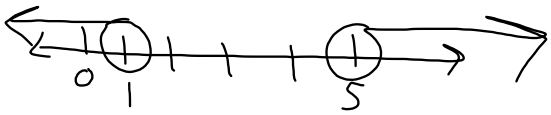
Solving Compound Inequalities Involving OR

$\boxed{-4 + a > 1}$ OR $\boxed{-4 + a < -3}$

$+4 \quad +4 \qquad +4 \quad +4$

$a > 5$ or $a < 1$



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$2x \le 6$ OR $3x > 12$

$\frac{2x}{2} \le \frac{6}{2} \qquad \frac{3x}{3} > \frac{12}{3}$

$x \le 3$ or $x > 4$

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