

27 FEB 2012

1ST 5
Graph and solve the compound inequalities.

1) $-5 < x + 5 < 5$

2) $1 < 3x + 4 < 10$

3) $2g > 12$ and $3g < 24$

Inequalities Day 10

1ST 5
Graph and solve the compound inequalities.

1) $-5 < x + 5 < 5$

$-5 < x + 5$ and $x + 5 < 5$

$\frac{-5}{-5} < \frac{x+5}{-5}$ and $\frac{x+5}{-5} < \frac{5}{-5}$

$-10 < x$ and $x < 0$

$-10 < x < 0$ $(-10, 0)$

Inequalities Day 10

2) $1 < 3x + 4 < 10$

$1 < 3x + 4$ and $3x + 4 < 10$

$\frac{1-4}{-3} < \frac{3x}{-3}$ and $\frac{3x}{-3} < \frac{6-4}{-3}$

$-\frac{3}{3} < \frac{3x}{3}$ and $\frac{3x}{3} < \frac{2}{3}$

$-1 < x$ and $x < 2$

$-1 < x < 2$ $(-1, 2)$

Inequalities Day 10

3) $\frac{2g}{2} > \frac{12}{2}$ and $\frac{3g}{3} < \frac{24}{3}$

$g > 6$ and $g < 8$

$6 < g$

$6 < g < 8$

Smallest largest

Inequalities Day 10

Pw 35 Practice 3-5 p. 42

1. $-10 < s < 0$; $(-10, 0)$

2. $-1 < x < 2$; $(-1, 2)$

5. $-3 < d < -2$; $(-3, -2)$

6. $-6 < t < 2$; $(-6, 2)$

7. $-6 < s < 4$; $(-6, 4)$

9. $-2 < x < 2$; $(-2, 2)$

11. $-5 < y < -1$; $(-5, -1)$

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9) $-1 < \frac{1}{2}x < 1$

$-1 < \frac{1}{2}x$ and $\frac{1}{2}x < 1$

$-2 < x$ and $x < 2$

$-2 < x < 2$

11 $-6 < 9 + 3y < 6$

$-6 < 9 + 3y$ and $9 + 3y < 6$

$\frac{-6-9}{-9} < \frac{3y}{-9}$ and $\frac{9-6}{-9} < \frac{3y}{-9}$

$\frac{-15}{-9} < \frac{3y}{-9}$ and $\frac{3}{-9} < \frac{3y}{-9}$

$\frac{5}{3} < -y$ and $y < -1$

$-5 < y$ and $-5 < y < -1$

Feb 27-7:54 AM

14. $-2 < h < -1$; $(-2, -1)$

29. $-6 \leq x \leq -2$; $[-6, -2]$

25. $1 < h < 3$; $(1, 3)$

30. $-2 < x < -1$; $(-2, -1)$

26. $-1.2 < p < -0.2$; $(-1.2, -0.2)$

27. $7 < x < 9$; $(7, 9)$

Inequalities Day 10

26 $3 + p > 1$ and $2x < 10$

$2.2 + p > 1$ and $\frac{1.5p}{1.5} < \frac{-0.3}{1.5}$

$\frac{-2.2}{-2.2} < \frac{p}{-2.2}$ and $p < \frac{-0.3}{1.5}$

$p > -1.2$ and $p < -0.2$

$-1.2 < p < -0.2$

Feb 27-9:33 AM

14 $1 > 2h + 3 > -1$

$1 > 2h + 3$ and $2h + 3 > -1$

$\frac{1-3}{-2} > \frac{2h}{-2}$ and $\frac{2h}{-2} > \frac{-1-3}{-2}$

$\frac{-2}{-2} > \frac{2h}{-2}$ and $\frac{2h}{-2} > \frac{-4}{-2}$

$-1 > h$ and $h > -2$

$h < -1$ and $-2 < h$

smallest $-2 < h < -1$ largest

Feb 27-7:57 AM

32. $2 \leq s \leq 6$; $[2, 6]$

34. $-1 < x < 2$; $(-1, 2)$

36. $6 < g < 8$; $(6, 8)$

Inequalities Day 10

COMPOUND INEQUALITIES

o Solving Compound Inequalities Joined by OR

o Unions \cup union - joined together

o A: $x > 2$ B: $x > -5$ C: $x \leq -1$ D: $x < -9$

o Find A \cup C

$x > 2$ or $x \leq -1$

-1 2

Inequalities Day 10

COMPOUND INEQUALITIES

o A: $x > 2$ B: $x > -5$ C: $x \leq -1$ D: $x < -9$

o Find B U D

$x > -5$ or $x < -9$

Inequalities Day 10

COMPOUND INEQUALITIES

Solving Compound Inequalities Joined by OR

o Write a compound Inequality that represents each situation. Graph the solution

- All real numbers that are less than -3 or greater than 7

$x < -3$ or $x > 7$

Inequalities Day 10

COMPOUND INEQUALITIES

o Write a compound inequality that represents each situation. Graph the solution.

- Discounted fares are available to children 12 and under or to adults at least 60 years of age.

$x \leq 12$ or $x \geq 60$

Inequalities Day 10

Solving a Compound Inequality Containing OR

o Solve the compound inequality and graph.

- $4v + 3 < -5$ or $-2v + 7 < 1$

$$\frac{-3 \quad -3}{4v < -8} \quad \frac{-7 \quad -7}{-2v < -6}$$

$$\frac{4v < -8}{4 \quad 4} \quad \frac{-2v < -6}{-2 \quad -2}$$

$v < -2$ or $v > 3$

Inequalities Day 10

o Solve the compound inequality and graph the solution

- $-2x + 7 > 3$ or $3x - 4 \geq 5$

$$\frac{-7 \quad -7}{-2x > -4} \quad \frac{+4 \quad +4}{3x \geq 9}$$

$$\frac{-2x > -4}{-2 \quad -2} \quad \frac{3x \geq 9}{3 \quad 3}$$

$x < 2$ or $x \geq 3$

Inequalities Day 10

o $x \geq 10$ or $x \leq 7$

$x \leq -2$ or $x > 3$
 $(-\infty, -2] \cup (3, \infty)$

Interval Notation for Unions (or)
 $x > 10$ or $x \leq 7$ can be written as
 $(-\infty, 7] \cup (10, \infty)$

∞ means infinity

Inequalities Day 10

PW 36

Workbook pg. 42 # 3, 4, 8,
10, 12, 13, 15 - 18, 23 , 24
28. 31, 33, 35, 37, 38

Inequalities Day 10