

Review Test #5B - Inequalities and Absolute Value

Name _____ Class _____

Solve the following absolute value equations.

1.) $3|3-5r|-3=18$
 * Isolate absolute value
 $3|3-5r|=21$
 $|3-5r|=7$
 $3-5r=7$ or $3-5r=-7$
 $-5r=4$ $-5r=-10$
 $r=-4/5$ $r=2$
 Both check.

$\{-4/5, 2\}$

2.) $|\frac{x}{3}+2|=2x+\frac{1}{4}$
 $2(\frac{x}{3}+2=2x+\frac{1}{4})$ or $(\frac{x}{3}+2=-(2x+\frac{1}{4}))$
 $4x+24=24x+3$ $4x+24=-24x-3$
 $-20x+24=3$ $28x+24=-3$
 $-20x=-21$ $28x=-27$
 $x=\frac{21}{20}$ $x=\frac{-27}{28}$ ← doesn't check

$\{21/20\}$

3.) Marsha is buying plants and soil for her garden. The soil costs \$4 per bag and the plants cost \$10 each. She wants to buy at least 5 plants and can spend no more than \$100.

a.) Write and graph a system of inequalities to represent this situation.

Let x = # of bags of soil
 Let y = # of plants

$4x + 10y \leq 100 \rightarrow$ x-int: (25,0)
 y-int: (0,10)

$x + y \geq 5$

x-int: (5,0)
 y-int: (0,5)

b.) What is a possible combination of bags of soil and plants she can buy?

Answers vary
 one possible answer:
 8 bags of soil
 and
 4 plants

