Accelerated Geo B/Algebra II **Unit 7: Rational and Radical Relationships**

Name_____ Date_____

Unit: 7A	Test Review Part 2

1. It takes Kevin, working at a steady rate, 80 minutes to wax his car. Allison can wax the car in 60 minutes. Find how long it would take them to do the job working together.

3. $\frac{x}{80} + \frac{x \cdot 4}{60} = 1$ LCD: 240

$3x + 4x = 240$

$7x = 240$

$x = 34.3$ minutes together

2. It takes Ms. Green, working at a steady rate, 20 minutes to mow his front lawn. His nephew Chad can mow the lawn in 15 minutes. Find how long it would take them to do the job working together.

$3\ \frac{x}{20} + \frac{4x}{15} = 1^{\cdot 60}$ LCD: 60

$3x + 4x = 60$

$7x = 60$

$x = 8.6$ mins together

3. Team A can wash all the windows in the school in x hours. It takes Team B 13 hours to do the same job. If the teams work together, they can complete the job in 8.5 hours. How long does it take Team A to do the job alone?

13. $\frac{8.5}{x} + \frac{8.5^{x}}{13} = 1^{\cdot 13x}$ LCD: 13x

$110.5 + 8.5x = 13x$

$110.5 = 4.5x$

$x = 24.6$ hours for Team A

4. $^{2}\ \frac{4}{x} + \frac{5^{x}}{2} \leq -\frac{11^{2}}{x}$ LCD: 2x

$8 + 5x \leq -22$

$5x \leq -30$

$x \leq -6$

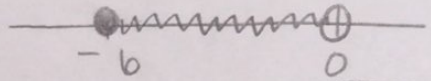
$x \neq 0$

Test: $x = 2$

$\frac{4}{2} + \frac{5}{2} \leq \frac{-11}{2}$ NO

$\frac{9}{2} \leq \frac{-11}{2}$

$[-6, 0)$



5. $^{2}\ \frac{3}{x} - \frac{1^{x}}{2} > \frac{12^{2}}{x}$ LCD: 2x

$6 - x > 24$

$-x > 18$

$x < -18$

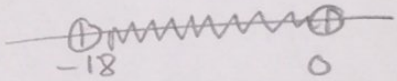
$x \neq 0$

Test $x = 2$

$\frac{3}{2} - \frac{1}{2} > \frac{12}{2}$

$\frac{1}{2} > 6$ NO

$(-18, 0)$



6. $\frac{3}{x^2 + 4x} \geq \frac{1}{x+4}$ LCD: $x(x+4)$ ^{x}

$3 \geq x$

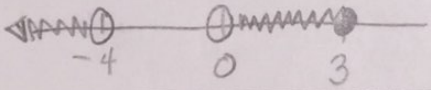
$x \neq 0, -4$

Test:

$x = 1$ $\frac{3}{4} \geq \frac{1}{5}$ yes

$x = -5$ $\frac{3}{5} \geq \frac{1}{-1}$ yes

$(-\infty, -4) \cup (0, 3]$



7. $\frac{-1}{x+2} < \frac{2}{x^2 + 2x}$ LCD: $x(x+2)$

$-x < 2$

$x > -2$

$x \neq 0, -2$

Test

$x = 1$

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

$-1 < -2$ NO

$x = -3$ $\frac{-1}{-1} < \frac{2}{3}$ $1 < 2/3$ NO

$x = 1$ $\frac{-1}{3} < \frac{2}{3}$ ✓

$(0, \infty)$