**Algebra 0507**
**Chapter 3**
**WS #24** **Name**_____

Solve. Assume y varies inversely as x. ( Inverse Variation: $xy$ = constant)

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| 1. If x = 4 when y = 5, find x when y = 2. | 2. If y = 8 when x = -7, find y when x = 4. |
| 3. If $x = \frac{1}{3}$ when y = 12, find y when x = 8. | 4. If $x = \frac{1}{4}$ when $y = \frac{4}{5}$, find x when $y = \frac{3}{10}$. |
| 5. If $x = \frac{1}{3}$ when y = 60, find y when x = 40. | 6. If y = 4.8 when x= 0.4, find y when x = 3.6 . |

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| 7. The amount of time necessary to make a trip varies inversely as the rate or travel. At 40 miles per hour it takes Jenny 5 hours to reach her destination. How long would it take if she drove at 50 miles per hour? | 8. The time required to do a job varies inversely as the number of workers. If it takes 3 men 4 days to paint a house, how long will it take 2 men working at the same rate to paint the same house? |
| 9. The speed of a gear varies inversely as the number of teeth. If a gear with 42 teeth makes 18 revolution per minute, how many revolutions per minute will be made by a gear with 28 teeth? | 10. The rent for a hotel room varies inversely as the number of people sharing the cost. Four people sharing a room each pay $45 per night. How much would each pay if 3 people shared the room? |