Algebra II Honors
Lesson 9.5 CW/HW
Show your work for credit

Name_____Date_____Period_____

Tell whether *x* and *y* show *direct variation, inverse variation,* or *neither*.

1. $x = \frac{y}{9}$ **2.** $y = \frac{1}{2}x$ **3.** $xy = 0.1$

The variables *x* and *y* vary inversely. Use the given values to write an equation relating *x* and *y*. Then find *y* when $x = -3$. (Lesson 9.1)

4. $x = 6, y = -2$ 5. $x = \frac{1}{5}, y = 30$

The variable *x* varies jointly with *y* and *z*. Use the given values to write an equation relating *x*, *y*, and *z*. Then find *y* when $x = 4$ and $z = 1$. (Lesson 9.1)

6. $x = 12, y = 6, z = \frac{1}{2}$ 7. $x = -10, y = 2, z = 4$

***Simple Interest*: In exercises 8-10, use the following information:**

The simple interest I (in dollars) for a savings account is jointly proportional to the product of the time t (in years) and the principal P (in dollars). After nine months, the interest on a principal of $3500 is $91.88.

8. Find the constant k.

9. Write an equation that relates I, t, and P.

10. What will the interest be after five years?

NAME _____ DATE _____ PERIOD _____

9-5 Practice

Variation Functions

State whether each equation represents a *direct*, *joint*, *inverse*, or *combined* variation. Then name the constant of variation.

1. $u = 8wz$

2. $p = 4s$

3. $L = \frac{5}{k}$

4. $xy = 4.5$

5. $\frac{C}{d} = \pi$

6. $2d = mn$

7. $\frac{1.25}{g} = h$

8. $y = \frac{3}{4x}$

9. If y varies directly as x and $y = 8$ when $x = 2$, find y when $x = 6$.

10. If y varies directly as x and $y = -16$ when $x = 6$, find x when $y = -4$.

11. If y varies directly as x and $y = 132$ when $x = 11$, find y when $x = 33$.

12. If y varies directly as x and $y = 7$ when $x = 1.5$, find y when $x = 4$.

13. If y varies jointly as x and z and $y = 24$ when $x = 2$ and $z = 1$, find y when x is 12 and z is 2.

14. If y varies jointly as x and z and $y = 60$ when $x = 3$ and $z = 4$, find y when x is 6 and z is 8.

15. If y varies jointly as x and z and $y = 12$ when $x = -2$ and $z = 3$, find y when x is 4 and z is -1.

16. If y varies inversely as x and $y = 16$ when $x = 4$, find y when $x = 3$.

17. If y varies inversely as x and $y = 3$ when $x = 5$, find x when $y = 2.5$.

18. If y varies directly as z and inversely as x and $y = -18$ and $z = 3$ when $x = 6$, find y when $x = 5$ and $z = -5$.

19. If y varies directly as z and directly as x and $y = 5$ and $z = 5$ when $x = 0.4$, find x when $y = 37.5$ and $z = 2$.

20. GASES The volume V of a gas varies inversely as its pressure P. If $V = 80$ cubic centimeters when $P = 2000$ millimeters of mercury, find V when $P = 320$ millimeters of mercury.

21. SPRINGS The length S that a spring will stretch varies directly with the weight F that is attached to the spring. If a spring stretches 20 inches with 25 pounds attached, how far will it stretch with 15 pounds attached?

22. GEOMETRY The area A of a trapezoid varies jointly as its height and the sum of its bases. If the area is 480 square meters when the height is 20 meters and the bases are 28 meters and 20 meters, what is the area of a trapezoid when its height is 8 meters and its bases are 10 meters and 15 meters?