Algebra 2H **HW #_____ and _____** **Name_____**
Handout 9AH
Section 9-1 **Direct, Inverse, and Joint Variation** **Period_____Column_____**

1. If n varies directly as p and $n = 12$ when $p = 10\frac{2}{3}$, find n when $p = 24$.	2. If y is directly proportional to $\sqrt{x}$, and $y = 6$ when $x = 4$, find y when $x = 16$.
3. If y is inversely proportional to x and $y = 60$ when $x = 0.5$, find x when $y = 12$.	4. If w varies directly as n and inversely as x^2, and $w = 8$ when $n = 2$ and $x = 3$, find w when $n = 3$ and $x = 2$.
5. The speed (s) of an object falling from rest is directly proportional to the time (t) it has fallen. After an object has fallen for 2.5 seconds, its speed is 24.5 meters/second. What is the speed of the object after it has fallen for 4 seconds?	6. According to Ohm's law, the current (C) flowing in a wire is inversely proportional to the resistance (R) of the wire. If the current is 5 amps when the resistance is 24 ohms, for what resistance will the current be 6 amps?
7. The period (p) of a pendulum (the time it takes for a back-and-forth swing) is directly proportional to the square root of the pendulum's length (L). If a pendulum 1 meter long has a period of 2 seconds, what is the length of a pendulum which has a period of 6 seconds?	8. The area (A) of a trapezoid varies jointly as the height (h) and the sum of the bases (b). If the area of a trapezoid is 25 when its height is 5 and the sum of its bases is 10, find the height of a trapezoid when the sum of its bases is 14 and the area is 49.

9. If s varies directly as $2t - 1$, and $s = 9$ when $t = 2$, find t when $s = 15$.	10. If s is jointly proportional to x and y, and $s = 15$ when $x = 2$ and $y = 1.5$, find s when $x = 0.5$ and $y = 6$.
11. If w varies jointly as x and y and inversely as z, and $w = 4$ when $x = 4$, $y = 5$, and $z = 6$, find w when $x = 3$, $y = 10$, and $z = 3$.	12. In a sample of 600 voters, 396 were in favor of approving a school bond measure. If there are 48,000 voters in the city, about how many are likely to vote in favor of approving the bond?
13. The intensity (I) of light varies inversely as the square of the distance (d) between the light source and the object illuminated. If a light meter that is 10 meters from a light source registers 20 lux in intensity, what intensity would it register at a distance of 20 meters from the light source?	14. The electrical resistance (R) of a wire varies directly as its length (L) and inversely as the square of its diameter (d). If 50 meters of wire with diameter 2 millimeters has resistance 9 ohms, what length of wire with diameter 3 millimeters has resistance 9.6 ohms?

Answers: 1. 27 2. 12 3. 2.5 4. 27 5. 39.2 m/s 6. 20 ohms
7. 9 ft 8. 7 9. 3 10. 15 11. 12 12. 31,680 voters
13. 5 lux 14. 120 m