Algebra 2H 9.1 Direct, Inverse and Joint Variation

Extra Practice
Handout 9A

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 s varies directly as $2t - 1$, and $s = 9$ when $t = 2$, find t when $s = 15$.
4. If v is inversely proportional to x, and $v = 60$ when $x = 0.5$, find x when $v = 12$.	5. 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 $y = 6$.	6. 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 $x = 2$.
7. 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 $z = 3$.	8. In a sample of 600 voters, 396 favored a school-bond measure. If there are 48,000 voters in a city, about how many are likely to vote for the bond?	9. The speed of an object falling from rest is directly proportional to the time it has fallen. After an object has fallen for 2.5 seconds, its speed is 24.5 meters/second. What is its speed after it has fallen for 4 seconds?

10. The period of a pendulum (the time for a back-and-forth swing) is directly proportional to the square root of its length. If a pendulum 1 meter long has a period of 2 seconds, what is the length of a pendulum with a period of 6 seconds?

11. According to Ohm's law, the current flowing in a wire is inversely proportional to the resistance of the wire. If the current is 5 amps (A), when resistance (R) is 24 Ω, for what resistance will the current be 6 A?

12. The intensity of light varies inversely as the square of the distance 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 20 meters from the light source?

13. The electrical resistance of a wire varies directly as its length and inversely as the square of its diameter. If 50 meters of wire with diameter 2 millimeters has resistance 9 Ω, find the resistance of 120 m of wire if its diameter is 3 mm.

14. The area ot a trapezoid varies jointly as its height and the sum of its bases. 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 area is 49.