AA2 wk 8 Tuesday Warm Up Name_____

1. If y varies directly as x and $y = 5$ when $x = 4$, find x when $y = 12$.

2. If x varies inversely as the square of y, and $x = 2$ when $y = 12$, find y when $x = 8$.

3. If x is jointly proportional to y and z, and $x = 48$ when $y = 6$ and $z = 4$, find z when $x = 540$ and $y = 18$.

4. The volume of a cylinder is jointly proportional to the height and the square of the radius of the base. If $V = 108\pi\ cm^3$ when the height is 12 cm and the radius is 3 cm, find r, the radius of a cylinder of height 2 cm and volume $72\pi\ cm^3$.

5. The electrical resistance of a wire varies directly as its length and inversely as the square of its diameter. One hundred meters of a wire with diameter 6 mm has resistance 12 ohms (Ω). Eighty meters of a second sire of the same material has resistance 15 Ω. Find the diameter of the second wire. (It is not necessary to do any unit conversions.)