**Identify which type of variation the following equations represent:**

1. **Direct**
2. **Inverse**
3. **Joint**
4. **Combined**
5. **Direct**
6. **Direct**
7. **Combined**
8. **9xy Joint**
9. **Combined**

**Simplify the following expressions and find the excluded values:**

**Excluded Values {-2,1,-3}**

**Excluded Values {0,2,-5}**

**-4 Excluded Values {-5}**

**This question had a typo, correct it and try again (Look at the red number in the problem, it was supposed to be in there). Excluded Values {-1,0,1,2}**

**Excluded Values {-2,1/4}**

**Excluded Values {3/2,-3/2}**

**Excluded Values{-3,-2,2}**

**Solve the following word problems:**

1. The dosage *d* of a drug that a physician prescribes varies directly as the patient’s mass *m*, and *d*=100 mg when *m*=55kg. Find *d* to the nearest milligram when *m*=70 k.
2. The heat *Q* required to raise the temperature of water varies jointly as the mass *m* of the water and the amount of temperature change *T*, and *Q*=20,930 joules (J) when *m*=1 kg and *T*=5⁰C. Find m when *Q*=8372 J and *T*= 10⁰C.