

241 TEST 2—RUBRIC FOR “SHOW WORK” QUESTION

The values being used in the question are: 29 tulips total

13 red

9 yellow

7 purple

$$\text{a) } P(\text{both red}) = P(\text{1st is red}) * P(\text{2nd is red} | \text{1st was red})$$

$$= \frac{13}{29} * \frac{12}{28}$$

$$= \frac{156}{812} \approx 0.192$$

$$\text{b) } P(\text{red then yellow}) = P(\text{1st is red}) * P(\text{2nd is yellow} | \text{1st was red})$$

$$= \frac{13}{29} * \frac{9}{28}$$

$$= \frac{117}{812} \approx 0.144$$

$$\text{c) } P(\text{yellow then red}) = P(\text{1st is yellow}) * P(\text{2nd is red} | \text{1st was yellow})$$

$$= \frac{9}{29} * \frac{13}{28}$$

$$= \frac{117}{812} \approx 0.144$$

$$\text{d) } P(\text{one red, one yellow}) = P(\text{yellow then red}) + P(\text{red then yellow})$$

$$= \frac{117}{812} + \frac{117}{812}$$

$$= \frac{234}{812} \approx 0.288$$

highlighted in blue: $\frac{1}{2}$ point

highlighted in green: $\frac{1}{2}$ point

highlighted in yellow: $\frac{1}{2}$ point

** 1.5 points per letter (a-d)
for a total of 6 points