Circle one name.

Name: _____ **Name:** _____ **Name:** _____

Note: If A and B are two subsets of a set X, then:

- $\overline{A}$ is the set of members of X that are *not* in A (the *complement* of A).

- $A \cup B$ is the set of members of X that are in A *or* in B (*or both*) (the *union* of A and B).

- $A \cap B$ is the set of members of X that are in A *and* also in B (the *intersection* of A and B).

Here is a list of 123 beads sorted by color and shape.

	$\triangle$	$\square$	Total
Red	1	8	9
Green	64	16	80
Blue	2	32	34
Total	67	56	123

A single bead is drawn at random. Let E be the event "The bead is green," and F be the event "The bead is a square."
    Determine:

1. $P(E)$, the probability that the bead is green

2. $P(\overline{E})$, the probability that the bead is not green

3. $P(F)$, the probability that the bead is a square

4. $P(\overline{F})$, the probability that the bead is not a square

5. $P(E \cup F)$, the probability that the bead is green or the bead is a square (or both)

6. $P(E \cap F)$, the probability that the bead is green and is also a square

7. Why does this make sense:

$$P(E \cup F) = P(E) + P(F) - P(E \cap F)$$