## - chapter sumwaliy

## BIG IDEAS

## Big Idea 1

Finding Probabilities of Simple Events

## To find $P(A)$ when...

all outcomes are equally likely, use
$P(A)=\frac{\text { Number of favorable outcomes }}{\text { Number of possible outcomes }}$
you perform an experiment, use $P(A)=\frac{\text { Number of successes }}{\text { Number of trials }}$

Finding Probabilities of Compound Events

| To find $\boldsymbol{P}(\boldsymbol{A}$ or $\boldsymbol{B})$ when... | ...use this formula |
| :--- | :--- |
| events $A$ and $B$ are disjoint or mutually <br> exclusive, that is, when events $A$ and $B$ <br> have no common outcomes | $P(A$ or $B)=P(A)+P(B)$ |
| events $A$ and $B$ are overlapping, that <br> is, when events $A$ and $B$ have at least <br> one common outcome | $P(A$ or $B)=P(A)+P(B)-P(A$ and $B)$ |
| To find $\boldsymbol{P}(\boldsymbol{A}$ and $\boldsymbol{B})$ when... | ...use this formula |
| events $A$ and $B$ are independent | $P(A$ and $B)=P(A) \cdot P(B)$ |
| events $A$ and $B$ are dependent | $P(A$ and $B)=P(A) \cdot P(B$ given $A)$ |

