ASSOCIATION RULES (aka: Rule-Based Attribution)

$$\text{SUPPORT} = \frac{\#\text{ of instances meeting criteria}}{\text{total \# of instances}}$$

$$\text{CONFIDENCE} = P(\{i_1 \wedge i_2 \wedge i_3\} \mid \{i_1 \wedge i_2\}$$ as an example.

ex)

rule		support	confidence
$3 \rightarrow 5$	"3 infers 5"	.3	$\frac{5 \cap 3}{3} = 100\%$
$4 \rightarrow 5$		.2	$.2/.5$
$2 \rightarrow 1$		.5	$.5/.5$
$5 \rightarrow 3$		.3	$.3/.6$

- association rules are evaluated via basic unconditional & conditional probabilities.

support ↑ unconditional

confidence ↑ conditional

- a common application is to use confidence to determine if two retail goods are substitutes or complements.