

P(B|A) represents the probability of event B occurring after it is assumed that event A has already occurred (read B|A as "B given A.")

$$P(B|A) = \frac{P(A \cap B)}{P(A)}$$
given that



Grade	Snowboarding	Skiing	Ice Skating	TOTAL
6th	68	41	46	155
7th	84	56	70	210
8th	59	74	47	180
TOTAL	211	171	163	545

P(7th grader, given ice skating)
$$P(7^{th}gr. \mid ice skating) = \frac{P(A \cap B)}{P(A)} = \frac{7D}{545} = \frac{7D}{163}$$



Grade	Snowboarding	Skiing	Ice Skating	TOTAL
6th	68	41	46	155
7th	84	56	70	210
8th	59	74	47	180
TOTAL	211	171	163	545

P(ice skating, given a 7th grader) =
$$\frac{70}{545} = \frac{70}{210} = \frac{1}{3}$$



Favorite Winter Sport

Grade	Snowboarding	Skiing	Ice Skating	TOTAL
6th	68	41	46	155
7th	84	56	70	210
8th	(59)	74	47	180
TOTAL	211	171	163	545

P(snowboarding, given an 8th grader)

180



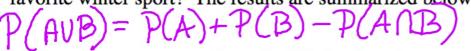
Favorite Winter Sport

Grade	Snowbearding	Skiing	Ice Skating	TOTAL
6th	68	(41)	46	155
7th	84	56	70	210
8th	59	74	47	180
TOTAL	211	171	163	545

P(skiing, given a 6th grader)



Grade	Snowboarding	Skiing	Ice Skating	TOTAL
6th	68	(41)	46	155
7th	84	56	70	210
8th	59	74	47	180
TOTAL	211	171	163	545





Grade	Snowboarding	Skiing	Ice Skating	TOTAL
6th	68	41	46	155
7th	84	56	70	210
8th	59	74	47	180
TOTAL	211	171	163	545

P(6th grader OR skiing) =
$$\frac{155}{545} + \frac{171}{545} - \frac{41}{545}$$

P(7th and skiing) = $\frac{56}{545}$

Day 10

If events A and B are independent, P(A) = 0.62, and $P(B \mid A) = 0.93$, what is P(B)?

© 0.67

® 0.58

(D) 0.41

Independent $P(ANB) = P(A) \cdot P(B)$ P(AIB) = P(ANB) P(A)

.93 = PEAD-PCB)

25 If P(A) = 0.43 and $P(B \mid A) = 0.89$, find P(A and B).

A 0.51

B 0.48

© 0.11

(D) 0.38

P(BIA) = P(A NB)
P(A)

 $.89 = \underbrace{P(AnB)}_{.43}$

A box contains three blue marbles, five red marbles, and four white marbles. If one marble is drawn at random, find:

- a) P(blue | not white)
- b) P(sed | not blue)

a) $\frac{3}{8}$

P)

- A number is selected, at random, from the set (1)2,3,4,5,6,7,8. Find:
 a) $P(odd) = \frac{1}{2}$ b) $P(prime \mid odd) = \frac{3}{4}$ 9.