

Mrs. Stiteler

Geometry

Blizzard Bag #1

**Instructions:** Please complete the 5 attached practice AIR test questions. You may use a calculator. Spend some time with each question; don't give up if you don't immediately know how to solve it.

## Question 48

Rosa collects data on what students at her school like to eat at the movie theater. She asks a random sample of 120 students two questions:

- Do you like to eat popcorn at the movie theater?
- Do you like to eat candy at the movie theater?

Her data are partially shown in the table. Of the students she asks, 60% of those who like to eat popcorn also like to eat candy.

Complete the table to show the number of students in each category.

	Like Popcorn	Don't Like Popcorn	Total
Like Candy	<input type="text"/>	<input type="text"/>	<input type="text"/>
Don't Like Candy	<input type="text"/>	<input type="text"/>	62
Total	70	<input type="text"/>	120

**Points Possible:** 1

**Content Cluster:** Understand independence and conditional probability and use them to interpret data.

**Content Standard:** Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results. (S.CP.4)*

## Question 18

Events A and B are independent.

$$P(A \text{ and } B) = 0.25$$

Enter possible probabilities for events A and B.

$$P(A) = \text{[input box]}$$

$$P(B) = \text{[input box]}$$

1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

**Points Possible:** 1

**Content Cluster:** Understand independence and conditional probability and use them to interpret data.

**Content Standard:** Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. (S.CP.2)

## Question 15

A total of 50 students play either soccer or lacrosse.

- 20 girls play lacrosse.
- 20 boys play either soccer or lacrosse.
- 20 students play soccer.

What is the probability that a student plays soccer or is a girl?

←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

**Points Possible:** 1

**Content Cluster:** Use the rules of probability to compute probabilities of compound events in a uniform probability model.

**Content Standard:** Apply the Addition Rule,  $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ , and interpret the answer in terms of the model. (*S.CP.7*)

## Question 12

The two-way table shows the number of births, in thousands, in the United States for the years 2010 and 2011.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
2010	324	303	340	327	325	338	346	359	350	342	337	326	4017
2011	322	299	330	315	328	335	348	362	346	331	328	322	3966

A baby born in 2011 is randomly selected.

What is the probability that the baby was born in February?

←→↶↷✖

1	2	3
4	5	6
7	8	9
	0	
	-	CE

**Points Possible:** 1

**Content Cluster:** Use the rules of probability to compute probabilities of compound events in a uniform probability model.

**Content Standard:** Find the conditional probability of  $A$  given  $B$  as the fraction of  $B$ 's outcomes that also belong to  $A$ , and interpret the answer in terms of the model. (S.CP.6)

## Question 26

Sam is picking fruit from a basket that contains many different kinds of fruit.

Which set of events is independent?

- (A) Event 1: He picks a kiwi and eats it.  
Event 2: He picks an apple and eats it.
- (B) Event 1: He picks an apple and eats it.  
Event 2: He picks an apple and eats it.
- (C) Event 1: He picks a kiwi and eats it.  
Event 2: He picks a kiwi and puts it back.
- (D) Event 1: He picks a kiwi and puts it back.  
Event 2: He picks an apple and puts it back.

**Points Possible:** 1

**Content Domain:** Conditional Probability and the Rules of Probability

**Content Standard:** Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer. (S.CP.5)