Analytic Geometry & Geometry

Analytic Geometry: COMPREHENSIVE COURSE OVERVIEW
Geometry: COMPREHENSIVE COURSE OVERVIEW

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**Big Idea (s)/ Topic(s)**

Students will learn:
- How to identify independent and dependent events.
- How to calculate basic probability.
- How to identify different probability notation symbols.
- How to identify and calculate mutually exclusive and complement events.
- How to identify and use Conditional Probability.
- How to use real-word two-way frequency tables to solve probability problems.

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**Standard(s) Alignment**

**Georgia Standards of Excellence:**

- **MGSE9-12.S.CP.1** Describe categories of events as subsets of a sample space using unions, intersections, or complements of other events (or, and, not).

- **MGSE9-12.S.CP.2** Understand that if two events A and B are independent, the probability of A and B occurring together is the product of their probabilities, and that if the probability of two events A and B occurring together is the product of their probabilities, the two events are independent.

- **MGSE9-12.S.CP.3** Understand the conditional probability of A given B as P (A and B)/P(B). Interpret independence of A and B in terms of conditional probability; that is, the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.

- **MGSE9-12.S.CP.4** 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, use collected 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.

- **MGSE9-12.S.CP.5** 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.

**Standards of Mathematical Practice:**

- Make sense of problems and persevere in solving them.
- Model with mathematics.
- Use appropriate tools strategically.
Diagnostic Assessment

There are 171717 members in a travel group. The Venn diagram below shows members that have been to the United States, Europe, both, or neither.

Complete the following two-way frequency table.

**Teacher Moves**

The teacher will guide students to complete the Diagnostic Assessment as a warm-up. The warm can be used as a formative assessment to see if students are ready for the lesson.

**Sample Responses**

R1 C1=2  
R2 C2= 6  
R1 C2= 5  
R2 C2= 4

Instructional Design

**Desmos Activity:** [Probability, Prizes, and more!](#)

**Material:**
- Printed version of lesson for Unplugged/Offline students. See Appendix A

**Engage**

There is one taco left! You and a friend are going to play a game and who ever wins the game, wins the taco.

In this game you love tacos but is that true in real life?

**Teacher Moves**

The teacher will instruct students to answer the prompt.

**Sample Responses**

Students’ answers will vary.
Your friend says, “We will each roll a die. If the highest number out of the two dice is a 5 or a 6, I win. And if the highest number out of the two dice is a 1, 2, 3, or 4, then you win. Whoever wins the most out of ten tries, wins the taco.”

You pause for three seconds and say...

**Teacher Moves**

The teacher will instruct students to answer the prompt.

**Sample Responses**

Students’ answers will vary.

---

This table will show four rounds of examples. Remember here are the rules. Let’s try an experimental probability game!

If the highest number out of the two dice is a 1, 2, 3, or 4, then Player A wins.
If the highest number out of the two dice is a 5 or a 6, player B wins.

(1) Press the button to reveal the rounds.

Does the winner for each round make sense to you?

**Teacher Moves**

The teacher will instruct students to answer the prompt.

**Sample Responses**

Students’ answers will vary.

---

**Teacher Moves**

The teacher will instruct students to use the simulation to fill out the table according to the game’s rules.

**Sample Responses**

Students’ answers will vary.
Maybe a certain player was getting lucky? Go back and roll the dice a bunch more times, like over 100 times. Just press the roll dice again, again, again. No need to record the values in the table.

Once you have rolled the dice a bunch more times, then answer the following question.

If we were to keep playing and playing the game, what do you think the percentages for player A and player B would get closer and closer to?

Teacher Moves

The teacher will instruct students to read and answer the prompt.

Sample Responses

The students’ response should include that the probabilities are getting closer to 1.

1) Calculate the experimental probability for each player.

2) Based on the number of wins, select the choice that shows who gets the taco.

Remember that \( \text{Probability} = \frac{\text{Number of ways it can happen}}{\text{Total number of outcomes}} \)

Teacher Moves

The teacher will instruct students to fill out the results from the previous slide.

Sample Responses

Students’ answers will vary.

- **Synchronous**: Complete Desmos activity during synchronous learning, either face to face, virtual, or blended. The teacher can restrict the slides 2 through 7 to ensure that students are actively participating in the “Engage” section of the lesson. The teacher can also use the Teacher Dashboard to monitor students’ progress and encourage group discussions.

- **Asynchronous** Using the teacher dashboard, unrestrict screens 2 through 7. Give students time to complete the screens and provide feedback. Ensure that enough time is provided for students to participate and respond to your feedback and edit responses as needed. Teachers can also provide ways that their students can contact them during the lesson to ask questions.

- **Unplugged/ Offline**: Provide students with the printable version of this lesson, which can be found in Appendix A. Have students share ideas through email, text, photos, and/ or scan document applications.
Let’s explore sample spaces!

**Sample Spaces are all the possible outcomes of an experiment.**

Let’s explore the sample space of 2 dice:

**Teacher Moves**

The teacher will instruct students to fill out the Sample Space chart for two dice.

**Sample Responses**

Students will fill out the sample space chart and explore how the total outcomes are 36.

**Teacher Moves**

The teacher will instruct students to complete the card sort.

**Sample Responses**

Use Card Sort Answer Key.

**Teacher Moves**

The teacher will instruct students to take notes or take a picture of the graphic organizer.

**Sample Responses**

Students will take notes or take a picture of the graphic organizer.
An **Event** is one or more outcomes of an experiment.

A **Complement** of an event is the opposite of that event.

For example: Event A is the probability of drawing a king from a deck of cards. The Complement of Event A is NOT drawing a king from a deck of cards.

The Event and the Complement add up to be 1.

\[
P(A) = \frac{4}{52}
\]
\[
P(A') = \frac{48}{52}
\]
\[
P(A) + P(A') = \frac{4}{52} + \frac{48}{52} = 1
\]

**Teacher Moves**

The teacher will guide students through learning about complements by using the example on the right-hand side of the slide.

**Sample Responses**

Probability of a heart: 13/52
Probability of not a heart: 39/52

**Independent Events** are events that are not affected by previous events.

**Formula:**

**Teacher Moves**

The teacher will instruct students to take notes or take a picture of the graphic organizer.

**Sample Responses**

Students will take notes or take a picture of the graphic organizer.
**Example:** You flip two quarters. What is the probability that you flip two heads?

Cool Tip: "And" in probability means that the two events are multiplied. "Or" in probability means that the two events are added.

\[ P(A \text{ and } B) = P(A) \times P(B) \]

\[ P(H \text{ and } H) = P(Heads) \times P(Heads) \]

**Follow the steps below:**

**Teacher Moves**

The teacher will instruct students to read and answer the prompt.

**Sample Responses**

1/4

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**Example:** There are 9 yellow flowers, 7 red flowers, and 12 orange flowers. You randomly choose a flower from the vase to take home. Your friend randomly chooses another flower from the vase to take home. What is the probability that you choose a red flower and your friend chooses a yellow flower?

\[ P(A \text{ and } B) = P(A) \times P(B \text{ after } A) \]

\[ P(\text{Red and Yellow}) = P(\text{Red}) \times P(\text{Red and then Yellow}) \]

**Follow the steps below:**

**Teacher Moves**

The teacher will instruct students to read and answer the prompt.

**Sample Responses**

1/12 or 83%
Conditional Probability is a formula that we use to handle different types of dependent events.

We can use these two formulas to help us solve conditional probability problems.

Teacher Moves

The teacher will use this slide as a guided instruction activity.

Sample Responses

12/2652 or 1/221 or .5%

Example 2:

80% of your friends like Chocolate, and 45% like Chocolate AND like Strawberry.

What percent of those who like Chocolate also like Strawberry?

Let's use this formula:

Teacher Moves

The teacher will instruct students to read and answer the prompt.

Sample Responses

9/16 or 56.3%

Non Mutually Exclusive Events are considered dependent events.

Teacher Moves

The teacher will instruct students to take notes or take a picture of the graphic organizer.

Sample Responses

Students will take notes or take a picture of the graphic organizer.
What is the probability of a junior owning a car?

Teacher Moves

The teacher will instruct students to try this problem on their own.

Sample Responses

6/36 or 1/6

● **Synchronous**: Complete Desmos activity during synchronous learning, either face to face, virtual, or blended. The teacher can restrict the slides 8 through 17 to ensure that students are actively participating in the “Explore” section of the lesson. The teacher can also use the Teacher Dashboard to monitor students’ progress and encourage group discussions.

● **Asynchronous**: Using the teacher dashboard, unrestrict screens 8 through 17. Give students time to complete the screens and provide feedback. Ensure that enough time is provided for students to participate and respond to your feedback and edit responses as needed. Teachers can also provide ways that their students can contact them during the lesson to ask questions.

● **Unplugged/ Offline**: Provide students with the printable version of this lesson, which can be found in Appendix A. Have students share ideas through email, text, photos, and/or scan document applications.

What is the probability that a person owns a car?

Teacher Moves

The teacher will instruct students to try this problem on their own.

Sample Responses

18/36 or 1/2
20 Apply: Problem 3

Estimate the probability that a randomly selected student will be a junior, given that the student owns a car.

**Teacher Moves**
The teacher will instruct students to try this problem on their own.

**Sample Responses**
1/3

21 Apply: Problem 4

Are having a job (A) and being 18 or greater (B) independent events? Explain.

**Teacher Moves**
The teacher will instruct students to try this problem on their own.

**Sample Responses**
Answers need to include the following: \( P(A) = \) has a job; \( P(A') = \) does not have a job; \( P(B) = 18 \) years old or greater; \( P(B') = \) less than 18 years old

22 Apply: Problem 5

What is the probability that a randomly selected person surveyed has a job, given that the person is less than 18 years old?

**Teacher Moves**
The teacher will instruct students to try this problem on their own.

**Sample Responses**
.08

23 Apply: Problem 6

What is the probability that a randomly selected person surveyed has a job, given that the person is greater than or equal to 18 years old?

**Teacher Moves**
The teacher will instruct students to try this problem on their own.

**Sample Responses**
.86
Assume that the following events are independent:

- The probability that a high school senior will go to college is 0.72.
- The probability that a high school senior will go to college and live on campus is 0.46.

**What is the probability that a high school senior will live on campus, given that the person will go to college?**

**Teacher Moves**

The teacher will instruct students to try this problem on their own.

**Sample Responses**

0.64

- **Synchronous**: Complete Desmos activity during synchronous learning, either face to face, virtual, or blended. The teacher can restrict the slides 18 through 24 to ensure that students are actively participating in the “Apply” section of the lesson. The teacher can also use the Teacher Dashboard to monitor students’ progress and encourage group discussions. If students need to work in pairs, then the teacher can use flexible groups to pair up the class.

- **Asynchronous** Using the teacher dashboard, unrestrict screens 18 through 24. Give students time to complete the screens and provide feedback. Ensure that enough time is provided for students to participate and respond to your feedback and edit responses as needed. Teachers can also provide ways that their students can contact them during the lesson to ask questions.

- **Unplugged/ Offline**: Provide students with the printable version of this lesson, which can be found in Appendix A. Have students share ideas through email, text, photos, and/ or scan document applications.

**Reflect**

**Teacher Moves**

The teacher will instruct students to write out 3 learning moments and 2 questions.

**Sample Responses**

Students’ response will vary.

- **Synchronous**: Complete Desmos activity during synchronous learning, either face to face, virtual, or blended. The teacher can use this reflection as a Ticket-Out-The Door activity.

- **Asynchronous** Using the teacher dashboard, unrestrict screens to slide 24. The teacher can use this reflection as a Ticket-Out-The Door activity.

- **Unplugged/ Offline**: Provide students with the printable version of this lesson, which can be found in Appendix A. Have students share ideas through email, text, photos, and/ or scan document applications.
### Evidence of Student Success

**Formative Assessment Questions:**
- How can I identify independent and dependent events?
- How can I calculate basic probability?
- How can I identify different probability notation symbols?
- How can I identify and calculate mutually exclusive and complement events?
- How can I identify and use Conditional Probability?
- How can I use real-word two-way frequency tables to solve probability problems?

### Student Learning Supports

**Establish mathematics goals to focus learning.**
- Make instructions and expectations clear for the activities.
- Make explicit connections between current and prior lessons or units.

**Facilitate meaningful mathematical discourse.**
- Explicitly model and teach good “discussion board” etiquette.

**Pose purposeful questions.**
- Predetermine when you will call on the student or use the pause feature within the activities.
- Break class into small discussion groups to work collaboratively and then have groups report back to the whole group.

**Support productive struggle in learning mathematics.**
- Offer outlines and other scaffolding tools and share tips that might help students learn.
- Provide feedback using the feedback feature within activities and offer corrective opportunities.
- Consider the pacing of the lesson.

**Elicit and use evidence of student thinking.**
- Anticipate any misconceptions or questions students might have about the task, materials or technology. Proactively address them with readily available and accessible resources.

### Additional Learning Support Strategies
- Allow students to work in pairs during the activity/lessons.

### Engaging Families

Students can deepen their understanding of probability by completing the following activities. Students may find it helpful to review the concepts alongside their parents, siblings, or friends at home.

- Investigate probabilities of sticking with a decision, or switching, in this activity that uses virtual manipulatives: [Stick or Switch - NLVM (usu.edu)](https://www.nltvm.org/java/Chances/index.html)
- Math is Fun: [https://www.mathsisfun.com/data/index.html](https://www.mathsisfun.com/data/index.html)
- Khan Academy: [https://www.khanacademy.org/math/statistics-probability/probability-library](https://www.khanacademy.org/math/statistics-probability/probability-library)
Appendix A: Printable Version

Diagnostic Assessment/ Warm Up

There are 171717 members in a travel group. The Venn diagram below shows members that have been to the United States, Europe, both, or neither.

Complete the following two-way frequency table.

<table>
<thead>
<tr>
<th></th>
<th>Have been to Europe</th>
<th>Have not been to Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have been to USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have not been to USA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engage: Do You Like Tacos?

There is one taco left! You and a friend are going to play a game and who ever wins the game, wins the taco.

In this game you love tacos but is that true in real life?

- Yes! I love tacos.
- Meh, tacos are okay.
- No! Tacos are blah.
Engage: Experimental Probability

<table>
<thead>
<tr>
<th>Round</th>
<th>Player A</th>
<th>Player B</th>
<th>Who won?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This table will show four rounds of examples. Remember here are the rules. Let's try an experimental probability game!

If the highest number out of the two dice is a 1, 2, 3, or 4, then Player A wins.
If the highest number out of the two dice is a 5 or a 6, player B wins.

(1) Press the button to reveal the rounds.

Does the winner for each round make sense to you?

Yes  No

If you have two dice, then roll them 4 times and record your results. If you do not have two dice, then use this chart to create your simulated results.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(1,1)</td>
<td>(1,2)</td>
<td>(1,3)</td>
<td>(1,4)</td>
<td>(1,5)</td>
<td>(1,6)</td>
</tr>
<tr>
<td>2</td>
<td>(2,1)</td>
<td>(2,2)</td>
<td>(2,3)</td>
<td>(2,4)</td>
<td>(2,5)</td>
<td>(2,6)</td>
</tr>
<tr>
<td>3</td>
<td>(3,1)</td>
<td>(3,2)</td>
<td>(3,3)</td>
<td>(3,4)</td>
<td>(3,5)</td>
<td>(3,6)</td>
</tr>
<tr>
<td>4</td>
<td>(4,1)</td>
<td>(4,2)</td>
<td>(4,3)</td>
<td>(4,4)</td>
<td>(4,5)</td>
<td>(4,6)</td>
</tr>
<tr>
<td>5</td>
<td>(5,1)</td>
<td>(5,2)</td>
<td>(5,3)</td>
<td>(5,4)</td>
<td>(5,5)</td>
<td>(5,6)</td>
</tr>
<tr>
<td>6</td>
<td>(6,1)</td>
<td>(6,2)</td>
<td>(6,3)</td>
<td>(6,4)</td>
<td>(6,5)</td>
<td>(6,6)</td>
</tr>
</tbody>
</table>
Engage: Experimental Probability
Row 1 shows your data from the last slide.

<table>
<thead>
<tr>
<th></th>
<th>Player A</th>
<th>Player B</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment Wins</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Experimental Win Probability</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Calculate the experimental probability for each player.

2) Based on the number of wins, select the choice that shows who gets the taco.

Remember that

\[
\text{Probability} = \frac{\text{Number of ways it can happen}}{\text{Total number of outcomes}}
\]

- [ ] Player A
- [ ] Player B
- [ ] Tie

Create a chart and record your results.
Explore: Sample Spaces of Dice

Let’s explore sample spaces!

**Sample Spaces are all the possible outcomes of an experiment.**

Let’s explore the sample space of 2 dice:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(1,1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>(3,4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>(4,2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(6,6)</td>
<td></td>
</tr>
</tbody>
</table>

Fill in the chart. What is the total sample space of rolling two dice?
Match the Item to its correct Sample Space.

- 52 total outcomes
- 2 total outcomes
- 6 total outcomes
Explore: Complement of an Event

An **Event** is one or more outcomes of an experiment.

A **Complement** of an event is the opposite of that event.

For example: Event A is the probability of drawing a king from a deck of cards. The Complement of Event A is NOT drawing a king from a deck of cards.

The Event and the Complement add up to be 1.

\[
P(A) = \frac{4}{52} \\
P(A') = \frac{48}{52} \\
P(A) + P(A') = \frac{4}{52} + \frac{48}{52} = 1
\]

**You try:**

Find the probability of drawing a heart.

\[\checkmark\]

Find the complement.

\[\checkmark\]

---

Explore: Independent Events

**Example:** You flip two quarters. What is the probability that you flip two heads?

Cool Tip: "And" in probability means that the two events are multiplied. "Or" in probability means that the two events are added.

\[
P(A \text{ and } B) = P(A) \times P(B) \\
P(H \text{ and } H) = P(\text{Heads}) \times P(\text{Heads})
\]

**Follow the steps below:**

(Select all that apply.)

- [ ] Find total outcomes
- [ ] Find the Probability of Event A
- [ ] Find the Probability of Event B
- [ ] Multiply the P(A) and P(B) together.

What is the answer?
Explore: Conditional Probability Type 1

**Conditional Probability** is a formula that we use to handle different types of dependent events.

We can use these two formulas to help us solve conditional probability problems.

\[
P(A \cap B) = P(A) \times P(B|A)
\]

OR

\[
P(B|A) = \frac{P(A \cap B)}{P(A)}
\]

**Example:**

You decided to see what the probability is of drawing a King and then drawing a King.

(Select all that apply.)

- [ ] Calculate the Probability for Event A.

- [ ] Calculate the Probability for Event B after adjusting for having one less King in the deck.

- [ ] Multiply the two probabilities together.

What is the answer? How likely are you to draw two kings back to back?
Explore: Mutually Exclusive Events Vs Not Mutually Exclusive Events (Take Notes)

**Not Mutually Exclusive**
- Drawing a Queen
- Drawing a Heart

**Mutually Exclusive**
- Drawing a King
- Drawing a 4

**Non Mutually Exclusive Events are considered dependent events.**

\[ P(A \cap B) = P(A) \times P(B|A) \]

**Mutually Exclusive Events are considered independent events.**

\[ P(A \cup B) = P(A) + P(B) \]

---

Apply: Problem 1

**What is the probability of a junior owning a car?**

<table>
<thead>
<tr>
<th>Car Ownership by Grade</th>
<th>Owns a Car</th>
<th>Does Not Own a Car</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Senior</td>
<td>12</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>18</td>
<td>36</td>
</tr>
</tbody>
</table>
Apply: Problem 2

What is the probability that a person owns a car?

<table>
<thead>
<tr>
<th></th>
<th>Owns a Car</th>
<th>Does Not Own a Car</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Senior</td>
<td>12</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>18</td>
<td>36</td>
</tr>
</tbody>
</table>

Apply: Problem 3

Estimate the probability that a randomly selected student will be a junior, given that the student owns a car.

<table>
<thead>
<tr>
<th></th>
<th>Owns a Car</th>
<th>Does Not Own a Car</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Senior</td>
<td>12</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>18</td>
<td>36</td>
</tr>
</tbody>
</table>

Apply: Problem 4

Are having a job (A) and being 18 or greater (B) independent events? Explain.

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Age (in Years)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has Job</td>
<td>Less than 18</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>18 or greater</td>
<td>245</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>265</td>
</tr>
</tbody>
</table>
Apply: Problem 6

A random survey was conducted to gather information about age and employment status. This table shows the data that were collected.

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Age (in Years)</th>
<th>18 or greater</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has Job</td>
<td>20</td>
<td>587</td>
<td>607</td>
</tr>
<tr>
<td>Does Not Have Job</td>
<td>245</td>
<td>92</td>
<td>337</td>
</tr>
<tr>
<td>Total</td>
<td>265</td>
<td>679</td>
<td>944</td>
</tr>
</tbody>
</table>

What is the probability that a randomly selected person surveyed has a job, given that the person is greater than or equal to 18 years old?