

Algebra II

Review from Textbook – Examination XI - KEY

Page 798 [1-6]

NETWORK: IND/ PARENT

GUIDED PRACTICE

SEE EXAMPLE 1
p. 794

- Vocabulary** When you open a rotating combination lock, order is ? (*important or not important*), so this is a ? (*permutation or combination*).
important; permutation
- Jamie purchased 3 blouses, 3 jackets, and 2 skirts. How many different outfits using a blouse, a jacket, and a skirt are possible? **18**
- An Internet code consists of one digit followed by one letter. The number zero and the letter O are excluded. How many codes are possible? **225**

SEE EXAMPLE 2
p. 796

- Nate is on a 7-day vacation. He plans to spend one day jet skiing and one day golfing. How many ways can Nate schedule the 2 activities? **42**
- How many ways can you listen to 3 songs from a CD that has 12 selections? **1320**
- Members from 6 different school organizations decorated floats for the homecoming parade. How many different ways can first, second, and third prize be awarded? **120**

Page 806 [1-9]

GUIDED PRACTICE

SEE EXAMPLE 1
p. 802

- Vocabulary** A fair coin is tossed 8 times and lands heads up 3 times. The ? of landing heads is $\frac{1}{2}$. (*theoretical probability or experimental probability*)
theoretical probability
- A quarter, a nickel, and a penny are flipped. Find the probability of each of the following.

2. The quarter shows heads. $\frac{1}{2}$

3. The penny and nickel show heads. $\frac{1}{4}$

4. One coin shows heads. $\frac{3}{8}$

5. All three coins land the same way. $\frac{1}{4}$

SEE EXAMPLE 2
p. 803

- What is the probability that a random 2-digit number (00-99) does not end in 5? $\frac{9}{10}$
- What is the probability that a randomly selected date in one year is not in the month of December or January? $\frac{303}{365}$

SEE EXAMPLE 3
p. 804

- A clerk has 4 different letters that need to go in 4 different envelopes. What is the probability that all 4 letters are placed in the correct envelopes? $\frac{1}{24}$
- There are 12 balloons in a bag: 3 each of blue, green, red, and yellow. Three balloons are chosen at random. Find the probability that all 3 of the balloons are green. $\frac{1}{220}$

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Page 815 [1-9]

GUIDED PRACTICE

1. **Vocabulary** Two events are ? if the occurrence of one event does not affect the probability of the other event. (*independent* or *dependent*) **independent**

SEE EXAMPLE 1

p. 811

Find each probability.

2. rolling a 1 and then another 1 when a number cube is rolled twice $\frac{1}{36}$
3. a coin landing heads up on every toss when it is tossed 3 times $\frac{1}{8}$

SEE EXAMPLE 2

p. 812

Two number cubes are rolled—one blue and one yellow. Explain why the events are dependent. Then find the indicated probability.

4. The blue cube shows a 4 and the product is less than 20. $\frac{1}{9}$
5. The yellow cube shows a multiple of 3, given that the product is 6. $\frac{1}{2}$

SEE EXAMPLE 3

p. 813

The table shows the results of a quality-control study of a lightbulb factory. A lightbulb from the factory is selected at random. Find each probability.

6. that a shipped bulb is not defective $\frac{471}{476}$
7. that a bulb is defective and shipped $\frac{1}{100}$

Lightbulb Quality		
	Shipped	Not Shipped
Defective	10	45
Not Defective	942	3

SEE EXAMPLE 4

p. 814

A bag contains 20 checkers—10 red and 10 black. Determine whether the events are independent or dependent. Find the indicated probability.

8. selecting 2 black checkers when they are chosen at random with replacement **independent; $\frac{1}{4}$**
9. selecting 2 black checkers when they are chosen at random without replacement **dependent; $\frac{9}{38}$**

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Page 822 [2-8]

A bag contains 25 marbles: 10 black, 13 red, and 2 blue. A marble is drawn from the bag at random.

SEE EXAMPLE 1

p. 819

2. Explain why the events “getting a black marble” and “getting a red marble” are mutually exclusive. **A marble is either black or red.**
3. What is the probability of getting a red or a blue marble? $\frac{3}{5}$
4. A car approaching an intersection has a 0.1 probability of turning left and a 0.2 probability of turning right. Explain why the events are mutually exclusive. What is the probability that the car will turn? **The car cannot turn both left and right; 0.3.**

SEE EXAMPLE 2

p. 820

Numbers 1–10 are written on cards and placed in a bag. Find each probability.

5. choosing a number greater than 5 or choosing an odd number $\frac{4}{5}$
6. choosing an 8 or choosing a number less than 5 $\frac{1}{2}$
7. choosing at least one even number when selecting 2 cards from the bag $\frac{7}{9}$

SEE EXAMPLE 3

p. 821

Five years after 650 high school seniors graduated, 400 had a college degree and 310 were married. Half of the students with a college degree were married.

8. What is the probability that a student has a college degree or is married? $\frac{51}{65}$
9. What is the probability that a student has a college degree or is not married? $\frac{54}{65}$