

Alg 1 Week 15 Block Warm Up

1. Skill 19: Multiply and Divide Rational Expressions

Simplify the polynomial completely.

$$\frac{3x^2 - 24x}{6x + 18} \cdot \frac{x^2 + 9x + 8}{2x^2 - 128}$$

2. Skill 20: Construct a box and whisker plot for a set of data, and find the mean and range, round to nearest tenth if needed.

apples per bushel: 129, 126, 113, 152, 99, 144, 118, 160, 104

min	Q1	Med	Q3	max

Range \_\_\_\_

Mean \_\_\_\_

3. Simplify completely.

a.  $\sqrt{12} - 7\sqrt{75}$

b.  $\sqrt{8}(\sqrt{3} + 3)$

c.  $(2\sqrt{3} + \sqrt{5})(6\sqrt{5} - 4\sqrt{3})$

d.  $\sqrt{\frac{t^5}{64}}$

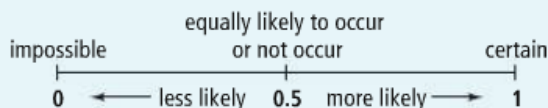
e.  $\sqrt{\frac{32t}{t}}$

## Notes 12-7 Probability

**Essential Understanding** The **probability** of an event, or  $P(\text{event})$ , tells you how likely it is that the event will occur. You can find probabilities by reasoning mathematically or by using data collected from an experiment.

**theoretical probability**  $P(\text{event}) = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}}$

You can write the probability of an event as a fraction, a decimal, or a percent. The probability of an event ranges from 0 to 1.



### Problem 1 Finding Theoretical Probability **STEM**

**Astronomy** Our solar system's 8 planets, in order of least to greatest distance from the sun, are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. You will randomly draw one of the names of the planets and write a report on that planet. What is the theoretical probability that you will select a planet whose distance from the sun is less than Earth's?

**Got It?** 1. In Problem 1, what is the theoretical probability that you will select a planet whose distance from the sun is greater than Earth's?

*Experimental probability* is based on data collected from repeated trials.

**experimental probability**  $P(\text{event}) = \frac{\text{number of times the event occurs}}{\text{number of times the experiment is done}}$

### Problem 4 Finding Experimental Probability **STEM**

**Quality Control** After receiving complaints, a skateboard manufacturer inspects 1000 skateboards at random. The manufacturer finds no defects in 992 skateboards. What is the probability that a skateboard selected at random has no defects? Write the probability as a percent.

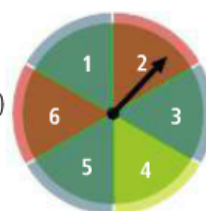
The spinner at the right is divided into six equal parts. Find the theoretical probability of landing on the given section(s) of the spinner.

$P(\text{blue})$

$P(\text{white})$

$P(5)$

$P(\text{not less than 3})$



## 12.7 Algebra 1 Wk 15 Block HW

### Theoretical and Experimental Probability

You spin a spinner that has 15 equal-sized sections numbered 1 to 15. Find the theoretical probability of landing on the given section(s) of the spinner.

- |                               |                              |                                |
|-------------------------------|------------------------------|--------------------------------|
| 1. $P(15)$                    | 2. $P(\text{odd number})$    | 3. $P(\text{even number})$     |
| 4. $P(\text{not } 5)$         | 5. $P(\text{less than } 5)$  | 6. $P(\text{greater than } 8)$ |
| 7. $P(\text{multiple of } 5)$ | 8. $P(\text{less than } 16)$ | 9. $P(\text{prime number})$    |

10. You roll a number cube. What is the probability that you will roll a number less than 5?

11. The probability that a spinner will land on a red section is  $\frac{1}{6}$ . What is the probability that the spinner will not land on a red section?

You choose a marble at random from a bag containing 2 red marbles, 4 green marbles, and 3 blue marbles. Find the probability of choosing.

- |               |              |
|---------------|--------------|
| 12. red       | 13. blue     |
| 14. not green | 15. not red  |
| 16. green     | 17. not blue |

18. You roll a number cube. What is the probability that you will roll an even number?

Why? EXPLAIN!

## A1 S2 w15d3 More 12-7 and 12-8.notebook

One hundred twenty randomly selected students at Roosevelt High School were asked to name their favorite sport. The results are shown in the table. Find the experimental probability that a student selected at random makes the given response.

19.  $P(\text{basketball})$

20.  $P(\text{soccer})$

21.  $P(\text{baseball})$

22.  $P(\text{football})$

**Favorite Sport Survey**

Sport	Number of Responses
Basketball	30
Baseball	22
Football	34
Soccer	20
Other	14

23. A meteorologist says that the probability of rain today is 35%. What is the probability that it will not rain?

24. Hank usually makes 11 out of every 20 of his free throws. What is the probability that he will miss his next free throw?

25. There are 250 freshmen at Central High School. You survey 50 randomly selected freshmen and find that 35 plan to go to the school party on Friday. How many freshmen are likely to be at the party?

26. The Widget Company randomly selects its widgets and checks for defects. If 5 of the 300 selected widgets are defective, how many defective widgets would you expect in the 1500 widgets manufactured today?

## CW/HW

Alg I wk 15  
HW

## 11.2 Multiplying and Dividing Rational Expressions

Multiply and or divide and simplify (evens).

2.  $\frac{x-9}{x+7} \cdot \frac{x}{x-6}$

4.  $\frac{j^2+11j-42}{26j-52} \cdot \frac{39j}{j-3}$

6.  $\frac{45q^2-3q-6}{q^2} \cdot \frac{14q^2+10q}{35q^2+11q-10}$

8.  $\frac{5y+7}{3y+19} \div \frac{5y+7}{y-6}$

10.  $\frac{12x^2+x-13}{45x^2-20x-25} \div \frac{x-1}{9x+5}$

12.  $\frac{25i^2-36}{56i} \div \frac{5i-6}{8i}$

Make a box and whisker plot using the camera prices.

15. camera prices: \$280 \$220 \$224 \$70 \$410 \$90 \$30 \$120

Simplify each expression.

16.  $\frac{3x^2+19x-14}{x^2-49}$

Time for Week 15 assessments:

Quiz

Skill 18.2

Performance Task - Week 15

CW/HW: handouts 12-7 and  
Multiply/Divide Rational  
Expressions Worksheet