SKILL 90

Are You Ready?

Tree Diagrams

Teaching Skill 90

Objective Draw a tree diagram.

Explain to students that a tree diagram can be used to organize all the possible outcomes in a sample space, particularly when an experiment involves more than one event.

Point out that a tree diagram looks like the branches of a tree. As you move from left to right on the diagram, each smaller branch represents a new type of possible outcome.

Have students read the example. Ask: **When Marie spins the first spinner, how many possible outcomes are there?** (4) **What are they?** (1, 2, 3, or 4) Point out that these will be the first branches of the tree. Ask: **When Marie spins the second spinner, how many outcomes are there?** (3) **What are they?** (red, blue, or yellow) Explain that each number branch should have three smaller branches that list each of the colors.

Work through the example with students and then have them complete the practice exercise.

PRACTICE ON YOUR OWN

In Practice on Your Own, students draw a tree diagram.

CHECK

Determine that students know how to create a tree diagram showing all possible outcomes for a given experiment.

Students who successfully complete the **Practice on Your Own** and **Check** are ready to move on to the next skill.

COMMON ERRORS

Students may forget to connect each of the first sets of outcomes with each of the second set.

Students who made more than 1 error in the **Practice on Your Own,** or who were not successful in the **Check** section, may benefit from the **Alternative Teaching Strategy.**

Alternative Teaching Strategy

Objective Draw a tree diagram as part of an experiment.

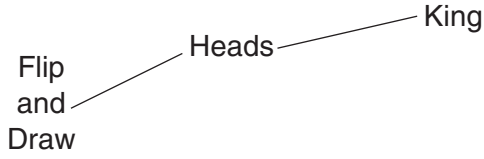
Materials needed: several coins and several sets of 4 cards (Ace, King, Queen, and Jack)

Tell students they are going to flip a coin and then draw a card. While doing so, they will be making a tree diagram showing all the outcomes that did occur and all those that did not occur. When they put them together, the tree diagram will show all possible outcomes of the experiment.

Give each student a coin and a set of four cards. Instruct students to begin a tree diagram by creating a starting point labeled "Flip and Draw." Next, have each student flip their coin. Then, they should draw one branch from their starting point and label it with the outcome they got (either heads or tails).

Next, instruct students to draw one card from the four they were given. Then, they should draw one branch from their already existing branch and label it with the card they drew.

For example, if a student flipped a head and then drew a King, his or her diagram should look like the following:



Ask: **When you flipped the coin, how many possible outcomes did you NOT get?** (1) Instruct students to add that outcome to their tree beneath the outcome they did get. Ask: **When you drew the card, how many possible outcomes did you NOT get?** (3) Have students add those outcomes to the branch on the outcomes they did get. Ask: **Should the bottom branch of your tree have the same set of second outcomes as the first?** (Yes) Have students complete their tree using this information.

Name _____ Date _____ Class _____

SKILL 90

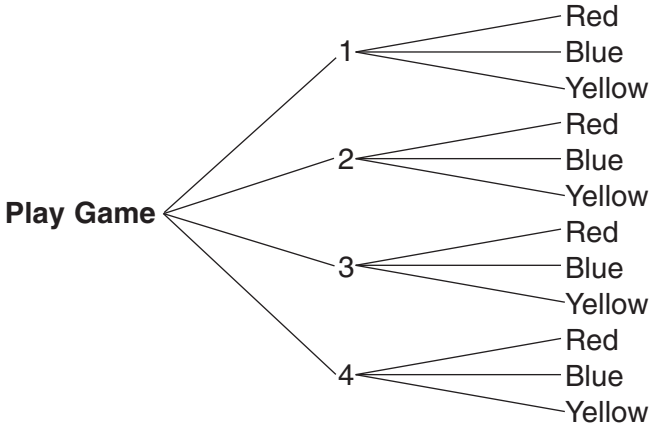
Are You Ready?

Tree Diagrams

Tree diagrams can be used to organize all the possible outcomes in a sample space, particularly when an experiment involves more than one event.

Example: **Marie is playing a game in which she must spin two spinners. The first spinner is divided into four equal sections, each numbered 1, 2, 3, or 4. The second spinner is divided into three equal sections, one that is red, one blue, and one yellow. Draw a tree diagram showing all the possible combinations of numbers and colors that Marie could spin.**

Answer: Since there are two events, there should be two sets of branches. One set will represent the first spin and should include all four numbers as possibilities. The second set will represent the second spin and should include all three colors on each of the number branches.



Practice on Your Own

Elizabeth is at a carnival. She is playing a game that asks her to pick a door and then pick a curtain behind the door. There are 3 doors and 4 curtains behind each door. Draw a tree diagram showing all possible ways that Elizabeth could choose a door and a curtain behind the door.

Play Game

Check

Mark gets to choose a snack when he gets home from school. He can have plain or chocolate milk to drink, and either a piece of fruit, popcorn, or peanut butter sticks to eat. Draw a tree diagram showing all possible snacks that Mark could choose if he gets only one drink and one thing to eat.

Snack Choices

SKILL 48

Are You Ready?

Add and Subtract Fractions

Teaching Skill 48

Objective Add and subtract fractions.

Review with students the meaning of "like fractions" and "unlike fractions."

Point out that adding and subtracting like fractions (fractions with the same denominators) requires simple addition or subtraction of the numerators; the denominator in the answer does not change.

Remind students that simplest form means no common factors in the numerator and denominator and no improper fractions. Review with students how to convert an improper fraction to a mixed number.

Work through the addition example.

Review with students the steps for adding or subtracting unlike fractions. Point out that in some cases, one of the denominators may be the LCD, in which case only the other fraction must be rewritten. Work through the subtraction example.

Ask: **When subtracting a fraction from a mixed number, what should you do first?** (Convert the mixed number to an improper fraction.)

Have students complete the exercises.

PRACTICE ON YOUR OWN

In exercises 1–8, students add and subtract fractions.

CHECK

Determine that students know how to add and subtract fractions.

Students who successfully complete the **Practice on Your Own** and **Check** are ready to move on to the next skill.

COMMON ERRORS

Students may add or subtract the denominators.

Students who made more than 2 errors in the **Practice on Your Own,** or who were not successful in the **Check** section, may benefit from the **Alternative Teaching Strategy.**

Alternative Teaching Strategy

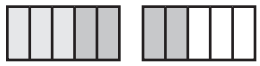
Objective Add like fractions.

Some students may benefit from a visual model of adding like fractions. Encourage students to use a model until they are comfortable without it.

To create a model for fifths, have students draw a rectangle and divide it into 5 columns of equal length. Explain that each column represents one-fifth.

Tell students they are going to find the sum of $\frac{3}{5} + \frac{4}{5}$. Instruct students to begin by shading 3 of the five columns in their rectangle.

Since there are not enough fifths to shade 4 more, draw a second rectangle with 5 columns. Instruct students to shade the remaining 2 fifths in the first rectangle and 2 more in the second rectangle.



Instruct students to count the shaded fifths. (7) Show that the sum is $\frac{7}{5}$. Remind students that they can rewrite this as a mixed number. $\left(1\frac{2}{5}\right)$

Ask: **How would you model fourths?** (Draw a rectangle with 4 columns.) **Tenths?** (Draw a rectangle with 10 columns.)

Have student practice this technique by find the sums $\frac{3}{7} + \frac{6}{7}$ $\left(1\frac{2}{7}\right)$ and $\frac{5}{12} + \frac{7}{12}$ $\left(\frac{12}{12} = 1.\right)$

As an extension of this exercise, have students consider the example $\frac{1}{4} + \frac{7}{8}$. Ask: **Could you use this technique to add the fractions as they are written?** (No) **What would you need to do first?** $\left(\text{Rewrite } \frac{1}{4}\right.$ as $\left.\frac{2}{8}.\right)$ Have students complete this problem.

Name _____ Date _____ Class _____

SKILL 48

Are You Ready?

Add and Subtract Fractions

General Operation Reminders	
Adding and Subtracting Fractions	
Like Fractions (same denominators)	Unlike Fractions (different denominators)
Step 1: Add or subtract the numerators. Step 2: Write the sum or difference of the numerators over the denominator. Step 3: Write the answer in simplest form.	Step 1: Find the least common denominator (LCD) and then rewrite each fraction so that its denominator is the LCD. Step 2: Follow the steps for adding or subtracting like fractions.
Example 1: Add $\frac{1}{8} + \frac{5}{8}$. $\frac{1}{8} + \frac{5}{8} = \frac{1+5}{8} = \frac{6}{8}$ (GCF of 6 and 8 is 2.) $\frac{6}{8} = \frac{6 \div 2}{8 \div 2} = \frac{3}{4}$ The sum is $\frac{3}{4}$.	Example 2: Subtract $1\frac{1}{2} - \frac{3}{4}$. Rewrite $1\frac{1}{2}$ as $\frac{3}{2}$. The LCD of 2 and 4 is 4. $\frac{3}{2} \times \frac{2}{2} = \frac{6}{4}$ $\frac{6}{4} - \frac{3}{4} = \frac{3}{4}$ The difference is $\frac{3}{4}$.

Practice on Your Own

Add or subtract. Give your answer in simplest form.

1. $\frac{2}{5} + \frac{1}{5}$ _____

2. $\frac{5}{7} - \frac{2}{7}$ _____

3. $\frac{2}{5} + \frac{1}{10}$ _____

4. $\frac{4}{9} - \frac{1}{3}$ _____

5. $1\frac{5}{9} - \frac{2}{9}$ _____

6. $\frac{7}{8} + \frac{3}{4}$ _____

7. $1\frac{2}{3} - \frac{5}{6}$ _____

8. $\frac{2}{3} + \frac{1}{6} + \frac{5}{12}$ _____

Check

Add or subtract. Give your answer in simplest form.

9. $\frac{6}{11} + \frac{3}{11}$ _____

10. $\frac{8}{9} - \frac{2}{9}$ _____

11. $\frac{3}{14} + \frac{1}{7}$ _____

12. $\frac{7}{12} - \frac{1}{4}$ _____

13. $1\frac{7}{8} - \frac{3}{8}$ _____

14. $\frac{7}{10} + \frac{3}{5}$ _____

15. $1\frac{1}{8} - \frac{3}{4}$ _____

16. $\frac{1}{5} + \frac{4}{15} + \frac{3}{10}$ _____

SKILL 47

Are You Ready?

Multiply and Divide Fractions

Teaching Skill 47

Objective Multiply and divide fractions.

Review with students the steps for multiplying fractions. Point out that it is a good idea to write fraction multiplication problems horizontally, rather than vertically, to keep the numerators and the denominators lined up.

Remind students that simplest form means no common factors in the numerator and denominator and no improper fractions. Review with students how to rewrite an improper fraction as a mixed number.

Work through the multiplication example.

Next review the steps for dividing fractions. Point out that the only difference between multiplying and dividing is Step 1. Ask: **How do you find the reciprocal of a fraction?** (Invert or "flip" it) **How do you find the reciprocal of a whole number?** (Write the whole number as a fraction with a denominator of 1 and then invert it.)

Work through the division example and have students complete the practice exercises.

PRACTICE ON YOUR OWN

In exercises 1–8, students multiply and divide fractions.

CHECK

Determine that students know how to multiply and divide fractions.

Students who successfully complete the **Practice on Your Own** and **Check** are ready to move on to the next skill.

COMMON ERRORS

Students may forget to use the reciprocal when dividing.

Students who made more than 2 errors in the **Practice on Your Own,** or who were not successful in the **Check** section, may benefit from the **Alternative Teaching Strategy.**

Alternative Teaching Strategy

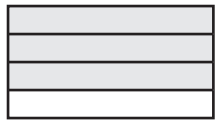
Objective Use modeling to multiply fractions.

Some students may benefit from being able to visualize multiplication.

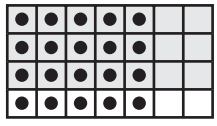
Tell students they are going to practice multiplying fractions using models. Write the following problem on the board:

$$\frac{3}{4} \times \frac{5}{7}$$

Instruct students to draw a rectangle and divide it into 4 rows of equal height. Explain that each row represents one-fourth. Have students shade 3 of the 4 rows to represent three-fourths.



Next instruct students to divide the rectangle into 7 columns of equal width. Ask: **Why 7 columns?** (to represent sevenths) **How many columns should you shade?** (5) Encourage students to shade differently (dots, diagonal lines, etc.) than before.



Ask: **How many small rectangles are there in the diagram?** (28) **How many of the rectangles have both types of shading?** (15) Explain to students that the product of the two fractions is

$$\frac{\text{\# with both shadings}}{\text{total \#}} = \frac{15}{28}.$$

Have students repeat this exercise to find the products below. Remind them to simplify where appropriate.

$\frac{5}{9} \times \frac{1}{4}$; $\frac{5}{6} \times \frac{7}{8}$; $\frac{2}{5} \times \frac{3}{4}$; $\frac{4}{5} \times \frac{1}{6}$; and $\frac{2}{3} \times \frac{5}{8}$

($\frac{5}{39}$; $\frac{35}{48}$; $\frac{3}{10}$; $\frac{2}{15}$; and $\frac{5}{12}$)

Name _____ Date _____ Class _____

SKILL 47

Are You Ready?

Multiply and Divide Fractions

General Operation Reminders	
Multiplying Fractions	**Dividing Fractions**
Step 1: Multiply the numerators. Multiply the denominators. Step 2: Write the answer in simplest form. Divide by the greatest common factor if needed.	Step 1: Find the reciprocal of the divisor (the second fraction) and rewrite the problem as a multiplication problem. Step 2: Multiply the numerators. Multiply the denominators. Step 3: Write the answer in simplest form. Divide by the greatest common factor if needed.
Example 1: Multiply $\frac{2}{5} \times \frac{3}{4}$. $\frac{2}{5} \times \frac{3}{4} = \frac{2 \times 3}{5 \times 4} = \frac{6}{20}$ GCF of 6 and 20 is 2. $\frac{6}{20} = \frac{6 \div 2}{20 \div 2} = \frac{3}{10}$. The product is $\frac{3}{10}$.	Example 2: Divide $\frac{1}{6} \div \frac{3}{4}$. $\frac{1}{6} \div \frac{3}{4} = \frac{1}{6} \times \frac{4}{3} = \frac{4}{18}$ GCF of 4 and 18 is 2. $\frac{4}{18} = \frac{4 \div 2}{18 \div 2} = \frac{2}{9}$. The product is $\frac{2}{9}$.

Practice on Your Own

Multiply or divide. Give your answer in simplest form.

1. $\frac{4}{5} \times \frac{1}{3}$ _____

2. $\frac{3}{4} \div \frac{1}{4}$ _____

3. $\frac{2}{9} \times \frac{1}{2}$ _____

4. $\frac{3}{5} \div \frac{2}{5}$ _____

5. $\frac{4}{7} \times \frac{1}{4}$ _____

6. $\frac{4}{11} \div 4$ _____

7. $\frac{9}{10} \times 5$ _____

8. $8 \div \frac{4}{3}$ _____

Check

Multiply or divide. Give your answer in simplest form.

9. $\frac{1}{9} \times \frac{1}{2}$ _____

10. $\frac{2}{5} \div \frac{3}{5}$ _____

11. $\frac{5}{8} \times \frac{4}{7}$ _____

12. $\frac{9}{11} \div \frac{1}{11}$ _____

13. $\frac{7}{12} \times \frac{1}{7}$ _____

14. $\frac{6}{7} \div 6$ _____

15. $\frac{3}{4} \times 2$ _____

16. $12 \div \frac{4}{5}$ _____

SKILL 49

Are You Ready?

Percent Problems

Teaching Skill 49

Objective Find the percent of a number.

Review with students how to change a percent to a decimal. Point out that if the percent is a one digit number (e.g. 7%), they will need to add a zero as a placeholder (e.g. 7% = 0.07).

Ask: **What do you have to remember when multiplying by a decimal?** (The number of decimal places in the final product must equal the number of decimal places in the factors.)

Tell students that percent problems can easily be converted into equations. Review the translation chart with students. Ask: **How can you represent an unknown quantity?** (You can use any variable, such as n or x.)

Work through the example with students. Point out that the percent must be converted to a decimal before multiplying.

Have students complete the exercises. Encourage the students to estimate the products before multiplying so they will know if their answers make sense.

PRACTICE ON YOUR OWN

In exercises 1–4, students find the product of a decimal and a whole number.

In exercises 5–10, students find the percent of a number.

CHECK

Determine that students know how to find the percent of a number.

Students who successfully complete the **Practice on Your Own** and **Check** are ready to move on to the next skill.

COMMON ERRORS

Students may forget to change the percent to a decimal before multiplying.

Students who made more than 2 errors in the **Practice on Your Own,** or who were not successful in the **Check** section, may benefit from the **Alternative Teaching Strategy.**

Alternative Teaching Strategy

Objective Find the percent of a number.

Explain to students that they can find percents using proportions.

Write the following words on the board: cents, century, centipede, and centimeter. Ask: **What does "cent" mean?** (100) Ask: **What does percent mean?** (per 100)

Ask: **Is 25% the same as $\frac{25}{100}$?** (Yes)

Remind students that a proportion is two ratios that are equal to each other. Write on the board this proportion: $\frac{\text{is}}{\text{of}} = \frac{\%}{100}$. Tell students that they can use this proportion to solve percent problems. For example, have students consider the following question: What is 25% of 200? Have students underline "what is" once, "25%" twice, and "200" three times.

$$\underline{\text{What is}} \quad \underline{\underline{25\%}} \quad \text{of} \quad \underline{\underline{\underline{200}}}?$$

Explain that "what" (or n since "what" is an unknown quantity) should be substituted for "is"; 200 should be substituted for "of"; and 25 should be substituted for %.

$$\frac{n}{200} = \frac{25}{100}$$

Ask: **How do you solve a proportion?** (Find the cross products.) **What are the cross products?** ($100n$ and 5000).

Write the equation $100n = 5000$ on the board. Ask: **How do you solve for the variable?** (Divide both sides of the equation by 100.) Solve the equation:

$\frac{100n}{100} = \frac{5000}{100}$; $n = 50$. So, 50 is 25% of 200.

Have students use this strategy to answer the following questions:

What is 80% of 50? (40);
What is 15% of 400? (60);
What is 35% of 120? (42); and
What is 90% of 440? (396)

Name _____ Date _____ Class _____

SKILL 49

Are You Ready?

Percent Problems

Multiplying by percents:

Step 1: Change the percent to a decimal by dropping the % symbol and moving the decimal point two places to the left.
Step 2: Multiply using rules for decimal multiplication.

Translating a percent problem into an equation:

Rewrite the percent as a decimal and then use the translations at the right to rewrite the problem as an equation.

Word	Mathematical Translation
what	an unknown quantity, such as n or x
is	equals or $=$
of	multiplication or $\cdot$ or $\times$ or ( )

Example: What is 30% of 90?

$n = 0.30 \times 90$

$n = 27$

Practice on Your Own

Multiply.

1. 0.25×72 _____

2. 0.15×60 _____

3. 0.20×1400 _____

4. 0.06×500 _____

Answer each question.

5. What is 12% of 50? _____

6. What is 70% of 30? _____

7. What is 22% of 150? _____

8. What is 10% of 450? _____

9. What is 50% of 168? _____

10. What is 65% of 4000? _____

Check

Multiply.

11. 0.08×250 _____

12. 0.35×60 _____

13. 0.40×600 _____

14. 0.75×480 _____

Answer each question.

15. What is 3% of 200? _____

16. What is 20% of 115? _____

17. What is 45% of 180? _____

18. What is 95% of 300? _____

SKILL 84

Are You Ready?

Find Measures of Central Tendency

Teaching Skill 84

Objective Find the mean, median, and mode of data.

Explain to students that there are three common measures of central tendency used to represent a set of data: the mean, the median, and the mode.

Explain that the mean is the arithmetic average. Ask: **How do you calculate an average?** (Find the sum of the values and divide by the number of values.) Have students review the mean example.

Next, explain that the median is the middle number when the data values are written in order from least to greatest, if there is an odd number of data values. Ask: **If there is an even number of data values, is there a middle number?** (No) Explain that the median is the average of the two middle numbers. Have students review the median example.

Finally, explain that the mode is the data value that appears the most often. Point out that there can be two modes (called bi-modal) if two values appear the most often. Have students review the mode example and then complete the practice exercises.

PRACTICE ON YOUR OWN

In exercises 1–9, students find the mean, median, and mode of sets of data.

CHECK

Determine that students know how to find measures of central tendency.

Students who successfully complete the **Practice on Your Own** and **Check** are ready to move on to the next skill.

COMMON ERRORS

When finding the median, students may forget to order the data values before they select the middle term.

Students who made more than 2 errors in the **Practice on Your Own,** or who were not successful in the **Check** section, may benefit from the **Alternative Teaching Strategy.**

Alternative Teaching Strategy

Objective Find the mean, median, and mode of a set of data collected by the student.

Tell the students they are going to collect data from their class mates and then find the mean, median, and mode of the data.

Ask: **Can you find the average of data such as favorite kind of car, favorite color, type of pet, etc?** (No) **What about the median of such data?** (No) **Why not?** (There are no numerical values.) Explain that this type of data is called qualitative data, while numerical data is called quantitative. Point out that only quantitative data has measures of central tendency.

Have the students select the data they would like to collect from their classmates. Discuss their choices to make sure the data is quantitative (and appropriate). Provide examples if needed (e.g. average number of math homework problems they do every night, how many miles they live from school, number of movies they watch per month, etc.)

Once each student has selected an appropriate data topic, have them write a specific question to collect their data. Then have the students ask each of the other students in the class their question. They should record the answers on a sheet of paper.

When everyone's data has been collected and recorded, review with students how to find the mean, median, and mode of sets of data.

Instruct each student to count the number of data values they collected (Everyone's should be the same if they asked each student their question.) Then have students find the mean, median, and mode of the data they collected.

Write all the data topics on the board and have students select a new set of data to collect. Repeat the exercise.

Name _____ Date _____ Class _____

SKILL 84

Are You Ready?

Find Measures of Central Tendency

Example: Find the mean, median, and mode of the data set: 10, 12, 13, 15, 10.

Mean	Median	Mode
The mean is the average of the data values: $\frac{\text{sum of all the values}}{\text{number of values}}$	The median is the middle number when the values are in order from least to greatest.	The mode is the data value that appears the most often.
$\frac{10 + 12 + 13 + 15 + 10}{5} = \frac{60}{5} = 12$	10, 10, (12,) 13, 15	10 is the only data value that appears more than one time.

Practice on Your Own

Find the mean, median, and mode of each data set.

1. 7, 6, 11, 9, 7

Mean = _____

Median = _____

Mode = _____

2. 2, 2, 3, 3, 4, 4, 4

Mean = _____

Median = _____

Mode = _____

3. 4, 5, 6, 7, 8, 9

Mean = _____

Median = _____

Mode = _____

4. 5, 4, 4, 4, 7, 6, 6, 6

Mean = _____

Median = _____

Mode = _____

5. 3, 1, 7, 10, 4

Mean = _____

Median = _____

Mode = _____

6. 22, 16, 24, 18

Mean = _____

Median = _____

Mode = _____

7. 5, 13, 1, 9, 5, 10, 6

Mean = _____

Median = _____

Mode = _____

8. 7, 7, 7, 9, 9, 9

Mean = _____

Median = _____

Mode = _____

9. 42, 35, 15, 18, 25

Mean = _____

Median = _____

Mode = _____

Check

Find the mean, median, and mode of each data set.

10. 4, 12, 7, 10, 7

Mean = _____

Median = _____

Mode = _____

11. 15, 10, 15, 25, 10, 15

Mean = _____

Median = _____

Mode = _____

12. 8, 8, 8, 9, 9, 9

Mean = _____

Median = _____

Mode = _____

13. 2, 10, 5, 9, 4, 6

Mean = _____

Median = _____

Mode = _____

14. 9, 9, 4, 4, 5, 5, 5

Mean = _____

Median = _____

Mode = _____

15. 12, 23, 18, 36, 11

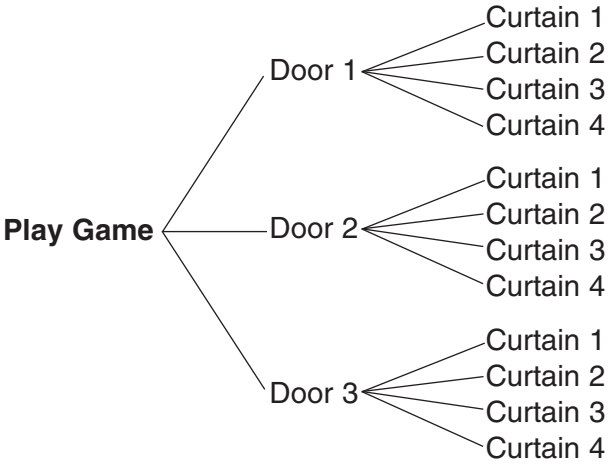
Mean = _____

Median = _____

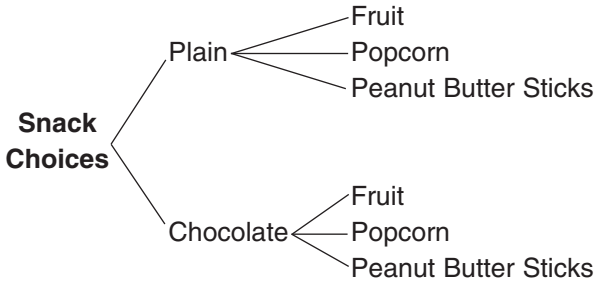
Mode = _____

SKILL 90 ANSWERS:

Practice on Your Own



Check



SKILL 47 ANSWERS:

Practice on Your Own

1. $\frac{4}{15}$
2. 3
3. $\frac{1}{9}$
4. $1\frac{1}{2}$
5. $\frac{1}{7}$
6. $\frac{1}{11}$
7. $4\frac{1}{2}$
8. 6

Check

9. $\frac{1}{18}$
10. $\frac{2}{3}$
11. $\frac{5}{14}$
12. 9
13. $\frac{1}{12}$
14. $\frac{1}{7}$
15. $1\frac{1}{2}$
16. 15

SKILL 48 ANSWERS:

Practice on Your Own

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

Check

9. $\frac{9}{11}$
10. $\frac{2}{3}$
11. $\frac{5}{14}$
12. $\frac{1}{3}$
13. $1\frac{1}{2}$
14. $1\frac{3}{10}$
15. $\frac{3}{8}$
16. $\frac{23}{30}$

SKILL 49 ANSWERS:

Practice on Your Own

1. 18
2. 9
3. 280
4. 30
5. 6
6. 21
7. 33
8. 45
9. 84
10. 2600

Check

11. 20
12. 21
13. 240
14. 360
15. 6
16. 23
17. 81
18. 285

7. 49; $(x + 7)^2$

8. 144; $(x - 12)^2$

9. $\frac{81}{4}$; $\left(x + \frac{9}{2}\right)^2$

Check

10. 9; $(x + 3)^2$

11. 64; $(x - 8)^2$

12. $\frac{25}{4}$; $\left(x + \frac{5}{2}\right)^2$

13. 100; $(x - 10)^2$

14. 1; $(x + 1)^2$

15. $\frac{49}{4}$; $\left(x - \frac{7}{2}\right)^2$

SKILL 83 ANSWERS:

Practice on Your Own

1. 28%

2. 30%

3. 23%

4. 19%

5. 58%

6. 81%

Check

7. 10%

8. 5%

9. 42%

SKILL 84 ANSWERS:

Practice on Your Own

1. mean = 8; median = 7; mode = 7

2. mean = $\frac{22}{7} \approx 3.1$; median = 3; mode = 4

3. mean = $\frac{39}{6} = 6.5$; median = 6.5; mode = none

4. mean = 5.25; median = 5.5; mode = 4 and 6

5. mean = 5; median = 4; mode = none

6. mean = 20; median = 20; mode = none

7. mean = 7; median = 6; mode = 5

8. mean = 8; median = 8; mode = 7 and 9

9. mean = 27; median = 25; mode = none

Check

10. mean = 8; median = 7; mode = 7

11. mean = 15; median = 15; mode = 15

12. mean = $\frac{51}{6} = 8.5$; median = 8.5; mode = 8 and 9

13. mean = 6; median = 5.5; mode = none

14. mean = $\frac{41}{7} \approx 5.9$; median = 5; mode = 5

15. mean = 20; median = 18; mode = none

SKILL 85 ANSWERS:

Practice on Your Own

1. 168

2. 432

3. 84%

4. 504

Check

5. 70

6. 25

7. 40%

8. 100

SKILL 86 ANSWERS:

Practice on Your Own

1. 7

2. 1

3. 19

4. 10