

GRADE 4 MATH

TERM 3 (2022-2023)

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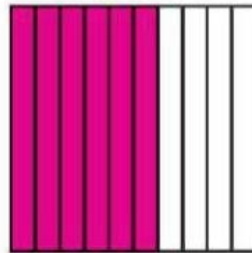
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Term 3

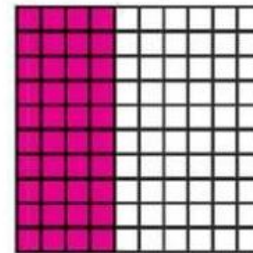
- › UNIT 12 - Decimal Fractions
- › UNIT 13 - Units of Measurement and Data
- › UNIT 14 -Geometric Figures

How can you shade the grid to represent the fraction?

1. $\frac{6}{10}$

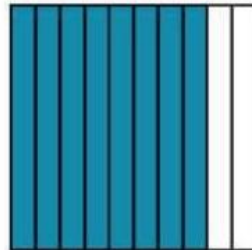


2. $\frac{40}{100}$

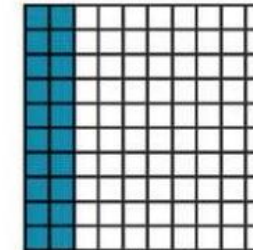


What fraction does the grid represent?

3. $\frac{8}{10}$



4. $\frac{20}{100}$



How can you express the fraction as an equivalent fraction with a denominator of 10 or 100? Complete the equation.

5. $\frac{70}{100} = \frac{7}{\boxed{10}}$

6. $\frac{\boxed{50}}{100} = \frac{5}{10}$

7. $\frac{2}{10} = \frac{\boxed{20}}{\boxed{100}}$

8. $\frac{\boxed{6}}{\boxed{10}} = \frac{60}{100}$

9. Which of these are equivalent to a fraction with a denominator of 10? Choose all that apply.

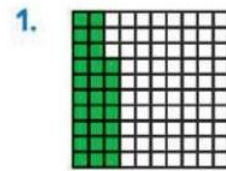
A. $\frac{3}{100}$

B. $\frac{10}{100}$

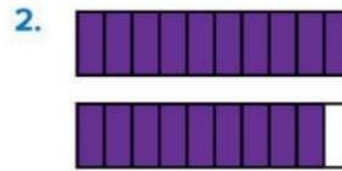
C. $\frac{25}{100}$

D. $1\frac{40}{100}$

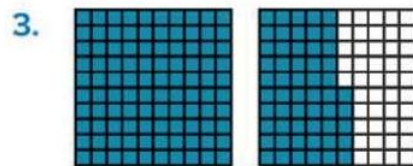
What number does the model represent? Write it as a fraction or mixed number and as a decimal.



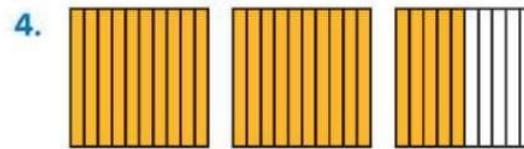
$$\frac{27}{100}, 0.27$$



$$1\frac{9}{10} \text{ or } \frac{19}{10}; 1.9$$



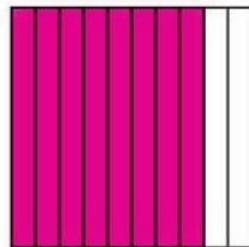
$$1\frac{55}{100} \text{ or } \frac{155}{100}; 1.55$$



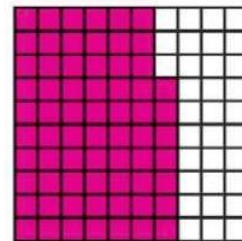
$$2\frac{5}{10} \text{ or } \frac{25}{10}; 2.5$$

How can you shade the grid to represent the decimal?

5. 0.8



6. 0.67



How can you convert the metric units? Complete the equation.

1. 12 meters = ? centimeters

$$12 \times \underline{100} = 1,200$$

$$12 \text{ meters} = \underline{1,200} \text{ centimeters}$$

2. 8 kilograms = ? grams

$$8 \times \underline{1,000} = 8,000$$

$$8 \text{ kilograms} = \underline{8,000} \text{ grams}$$

3. 14 centimeters = 140 millimeters

4. 25 liters = 25,000 milliliters

5. 4 centimeters = 40 millimeters

6. 6 meters = 6,000 millimeters

7. 10 liters = 10,000 milliliters

8. 200 meters = 20,000 centimeters

9. How many milliliters of water will fill the tea kettle? Explain.

2,000 milliliters;

I can multiply 2 by 1,000 to find the number of milliliters.



10. An inchworm crawls 3 meters. What are two other ways to represent the same distance using smaller units?

300 centimeters, 3,000 millimeters.

11. A box of printer paper weighs 9 kilograms. Does the box weigh more than 9,000 grams?

No, the box weighs 9 kilograms and 9,000 grams is equal to 9 kilograms.

12. In 6 kilometers, there are 6,000 meters. Why does the number with the measurement units increase from 6 to 6,000?

: There are 1,000 meters in each kilometer, so the number increases 1,000 times as much.

13. Would it be easier to lift the weight shown or one that weighs 5,000 grams? Explain.

5 Kg = 5,000 g : They both have the same mass.



What number makes the equation true?

1. 5 pounds = ? ounces

$$5 \times \underline{16} = 80$$

$$5 \text{ pounds} = \underline{80} \text{ ounces}$$

2. 8 tons = ? pounds

$$8 \times \underline{2,000} = 16,000$$

$$8 \text{ tons} = \underline{16,000} \text{ pounds}$$

3. 4 pounds = 64 ounces

4. 5 tons = 10,000 pounds

5. 96 ounces = 6 pounds

6. 14,000 pounds = 7 tons

7. 10 pounds = 160 ounces

8. 20 tons = 40,000 pounds

9. Mike bought 7 pounds of tomatoes to make a batch of pizza sauce. What is the weight of the tomatoes in ounces?

112 ounces

10. There are 160 ounces of potatoes in a 10-pound bag. Why is the number of ounces greater than the number of pounds?

For every 1 pound, there is 16 ounces. $10 \times 16 = 160$, so there are 160 ounces in 10 pounds.

11. A minivan weighs 3 tons. A truck weighs 8,000 pounds. Which vehicle weighs more? Explain.

The truck weighs more. I converted 3 tons to get 6,000 pounds which is less than the truck.

12. Jack bought $1\frac{1}{2}$ pounds of bananas. What is the weight of the bananas in ounces?

24 ounces



13. A truck weighs $2\frac{3}{4}$ tons. What is the weight of the truck in pounds?

5,500 pounds

14. Mark delivered 1 ton of fertilizer to the botanical garden. Each day they spread 50 pounds of fertilizer on the plants. How many days will it take to spread all the fertilizer? Explain.

40 days; I converted 1 ton to 2,000 pounds and determined that 2,000 is 40 groups of 50.

What decimal represents the total amount of money?



\$ 1.24



\$ 5.33



\$ 7.46



\$ 2.12



5. Marnie has the amount shown. Her mom gives her a one-dollar bill and 2 dimes. How much money does Marnie have now?



\$6.82

6. John has the amount shown. He spends \$1.25. How much money does John have now?



\$1.23

What number makes the equation true?

1. 5 hours = ? minutes

$$5 \times \underline{60} = 300$$

$$5 \text{ hours} = \underline{300} \text{ minutes}$$

2. 10 minutes = ? seconds

$$10 \times \underline{60} = 600$$

$$10 \text{ minutes} = \underline{600} \text{ seconds}$$

3. 7 hours = 420 minutes

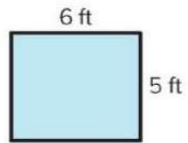
4. 6 minutes = 360 seconds

5. 6 hours = 360 minutes

6. 15 hours = 900 minutes

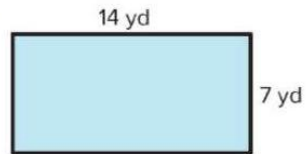
What is the missing value?

1.



$$P = \underline{22} \text{ ft}$$

2.



$$P = \underline{42} \text{ yd}$$

3. $l = 10$ miles, $w = 4$ miles

$$P = 2 \times (10 + \underline{4})$$

$$P = \underline{28} \text{ miles}$$

4. $l = 5$ km, $w = 2$ km

$$P = (2 \times 5) + (2 \times \underline{2})$$

$$P = \underline{14} \text{ km}$$

5. $l = 8$ m, $w = 5$ m

$$P = \underline{26} \text{ m}$$

6. $l = 5$ units, $w = 5$ units

$$P = \underline{20} \text{ units}$$

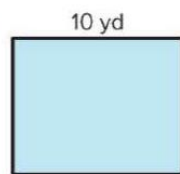
7.



$$P = 24 \text{ inches}$$

$$w = \underline{4} \text{ inches}$$

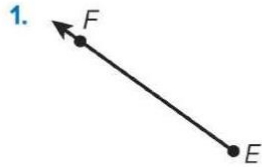
8.



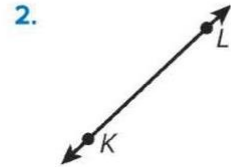
$$P = 36 \text{ yd}$$

$$w = \underline{8} \text{ yd}$$

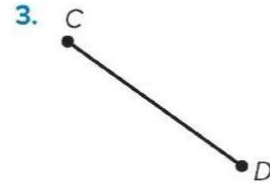
How can you name the figure? Write the name that best describes it.



Ray EF



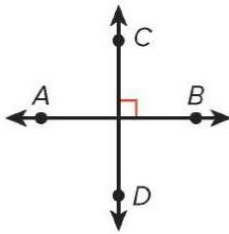
Line KL



Line segment CD

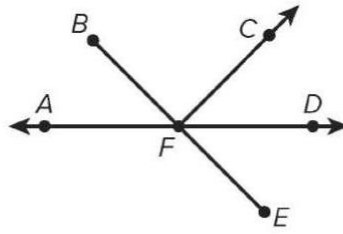
What name best describes the part of the figure containing the given points? Write the name of the figure.

4. Contains points A and B



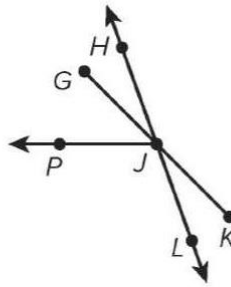
line

5. Contains points C and F



ray

6. Contains points G and J



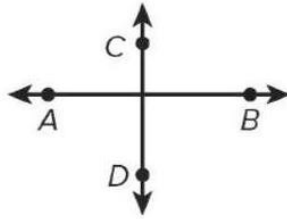
line segment

Draw the figure.

7. Line segment UV (\overline{UV}) 8. Ray TS (\vec{TS}) 9. Line JK (\overleftrightarrow{JK})

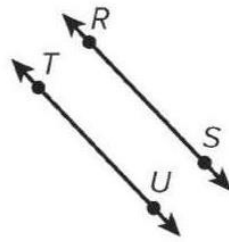
How can you describe the pair of lines shown? Label the pair of lines as parallel, perpendicular, or neither.

1.



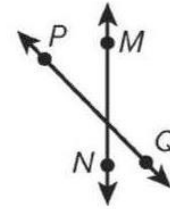
Perpendicular

2.



Parallel

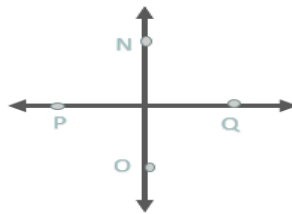
3.



Neither

Draw a pair of lines that match the description.

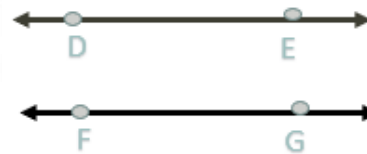
4. Perpendicular



5. Intersecting, but not perpendicular.



6. Parallel



What capital letter of the alphabet matches the description?

7. Includes perpendicular and parallel lines

8. Includes perpendicular lines, but not parallel lines

9. Includes parallel lines, but not perpendicular lines

Sample answer: F **Sample answer: T** **Sample answer: Z**

How can you express the decimals as fractions to compare?

Write the fractions, and complete with $>$, $<$, or $=$.

5. $0.62 > 0.26$

$$\frac{62}{100} > \frac{26}{100}$$

6. $0.57 < 0.7$

$$\frac{57}{100} < \frac{70}{100}$$

What comparison statement can you write for the decimals?

Explain your thinking.

7. 0.27 and 0.4

$0.27 < 0.4$; 4 tenths is greater than 2 tenths.

8. 1.4 and 0.63

$1.4 > 0.63$; The whole number 1 is greater than the whole number 0.

9. Which comparisons are true? Choose all that apply.

A. $0.4 = 0.04$

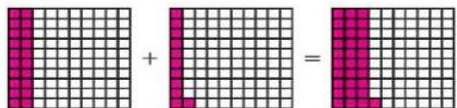
B. $0.78 < 0.9$

C. $0.27 > 0.3$

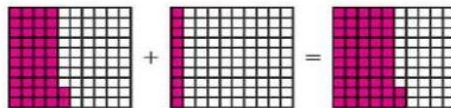
D. $2.51 > 2.3$

How can you use the representation to find the sum?

$$1. \frac{2}{10} + \frac{11}{100} = \frac{31}{100}$$



$$2. \frac{42}{100} + \frac{1}{10} = \frac{52}{100}$$



What is the sum? Explain your work.

$$3. \frac{4}{10} + \frac{9}{100} = \frac{49}{100}$$

$$\frac{4}{10} = \frac{40}{100},$$

$$\text{and } \frac{40}{100} + \frac{9}{100} = \frac{49}{100}$$

$$4. \frac{53}{100} + \frac{3}{10} = \frac{83}{100}$$

$$\frac{3}{10} = \frac{30}{100},$$

$$\text{and } \frac{53}{100} + \frac{30}{100} = \frac{83}{100}$$

$$5. \frac{2}{10} + \frac{13}{100} = \frac{33}{100}$$

$$\frac{2}{10} = \frac{20}{100},$$

$$\text{and } \frac{20}{100} + \frac{13}{100} = \frac{33}{100}$$

$$6. \frac{21}{100} + \frac{7}{10} = \frac{91}{100}$$

$$\frac{7}{10} = \frac{70}{100},$$

$$\text{and } \frac{21}{100} + \frac{70}{100} = \frac{91}{100}$$

7. Keegan walks $\frac{5}{10}$ mile to meet his friend. Then Keegan and his friend walk $\frac{35}{100}$ mile to the park. How far did Keegan walk in all?

$\frac{85}{100}$ mile

8. Which addition problems have a sum of $\frac{62}{100}$? Choose all that apply.

A. $\frac{6}{10} + \frac{2}{100}$

B. $\frac{6}{100} + \frac{2}{10}$

C. $\frac{4}{10} + \frac{22}{100}$

D. $\frac{4}{10} + \frac{58}{100}$

13	Use representations to solve word problems that involve converting units of measure	(1-6)	185
		(7-9)	186

Solve the problem.

1. Derinda's dog weighs 4 pounds. Elizabeth's dog weighs $5\frac{1}{4}$ pounds. What is the combined weight of the two dogs in ounces?

148 ounces

2. Fasil makes 3 gallons of soup. He puts the soup in 1-quart containers. How many containers can he fill?

12 containers

3. Jasmine has $3\frac{2}{3}$ yards of lace for 5 pillows. She uses 20 inches of lace for each pillow. How much lace does she have left?

32 inches

4. Helen worked in the garden from 2:20 p.m. to 6:15 p.m. How many minutes did she work in the garden?

235 minutes

5. A vine grows $\frac{1}{2}$ foot each week. How many inches does it grow in 6 weeks?

36 inches

6. Hannah has 3 quarts of blueberries and 7 pints of raspberries. How many pints of berries does she have?

13 pints

7. How much more does a $6\frac{1}{2}$ -ton elephant weigh than an 8,000-pound hippopotamus?

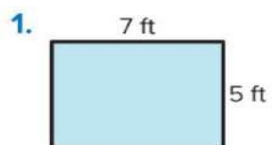
5,000 pounds

8. One soccer game ends at 10:15 a.m. and the next soccer game starts at 1:20 p.m. How many minutes are there between the games?

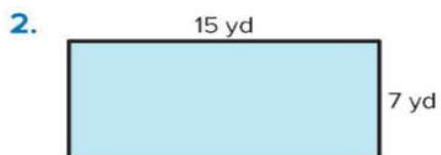
185 minutes

9. Jess swam 400 yards in 14 minutes. Christina swam 960 feet in the same amount of time. Who swam faster? Explain.

Jess; Jess swam 1,200 feet in the same amount of time Christina swam 960 feet, so Jess swam faster.

What is the area?

$$A = \underline{35} \text{ square ft}$$



$$A = \underline{105} \text{ square yd}$$

3. $l = 12$ meters, $w = 6$ meters

$$A = \underline{72} \text{ square meters}$$

4. $l = 25$ km, $w = 4$ km

$$A = \underline{100} \text{ square km}$$

5. $l = 8$ cm, $w = 5$ cm

$$A = \underline{40} \text{ square cm}$$

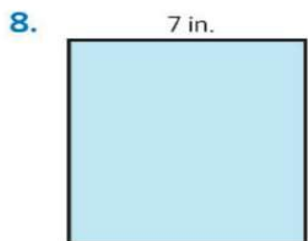
6. $l = 22$ miles, $w = 5$ miles

$$A = \underline{110} \text{ square miles}$$

What is the missing value?

$$A = 44 \text{ square miles}$$

$$l = \underline{11} \text{ miles}$$



$$A = 49 \text{ square inches}$$

$$w = \underline{7} \text{ inches}$$

Solve the problem.

9. A rectangular garden has a width of 9 feet and an area of 144 square feet. What is the length of the garden?

16 feet

10. A square piece of cardboard has a side length of 18 inches. What is the area of the piece of cardboard? Show your work.

324 square inches; $A = 18 \times 18$; $A = 324$

11. A rectangular park has an area of 60 square miles. What are 3 possible length and width combinations? How did you find your answer?

6 miles and 10 miles, 4 miles and 15 miles, 2 miles and 30 miles; I used 3 factor pairs of 60 to determine possible dimensions.

12. If the width of the blanket is half the length, what is the area of the blanket?

**1,800 square inches;
Half of 60 is 30 and $60 \times 30 = 1,800$.**



60 in.

13. **Error Analysis** The side lengths of a square are 6 units each. Marcus says the area of the rectangle is 24 square units. How can you explain his error?

**Marcus found the perimeter.
The area is the product of the length and width, which is 36 square units.**

14. The area of a rectangular parking lot is 2,500 square feet. If the length of the parking lot is 100 feet, what is the width?

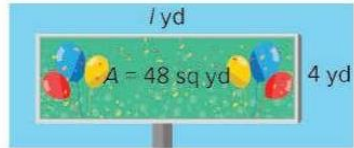
25 feet

15. **Extend Your Thinking** The perimeter of a rectangle is 24 feet. What could be the area? Find 3 possible answers.

**: 20 square feet, 35 square feet,
36 square feet**

What is the unknown measurement?

1. A billboard has the following measurements.



- a. What is the length of the billboard?

$$48 = l \times 4$$

$$l = \underline{12} \text{ yd}$$

- b. What is the perimeter?

$$P = 2 \times (\underline{12} + 4)$$

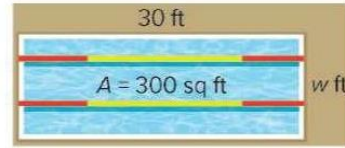
$$P = 2 \times \underline{16}$$

$$P = \underline{32} \text{ yd}$$

3. A rectangular koi pond has an area of 12 square feet and a width of 2 feet. What is the length and perimeter?

$$l = \underline{6} \text{ ft} \quad P = \underline{16} \text{ ft}$$

2. A lap pool has the following measurements.



- a. What is the width of the lap pool?

$$300 = 30 \times w$$

$$w = \underline{10} \text{ ft}$$

- b. What is the perimeter?

$$P = 2 \times (30 + \underline{10})$$

$$P = 2 \times \underline{40}$$

$$P = \underline{80} \text{ ft}$$

4. A rectangular rug has an area of 15 square feet and a width of 3 feet. What is the length and perimeter?

$$l = \underline{5} \text{ ft} \quad P = \underline{16} \text{ ft}$$

7. A rectangular park has an area of 12 square miles. What are 3 possible perimeters in miles? Justify your solutions.

14 miles, 16 miles, and 26 miles; I used 3 factor pairs of 12: 3 and 4, 2 and 6, and 1 and 12, and then found the perimeter using each factor pair.

8. A gardener has 60 inches of edging material to surround a rectangular flowerbed. What is the greatest possible area of the flowerbed? Justify your solution.

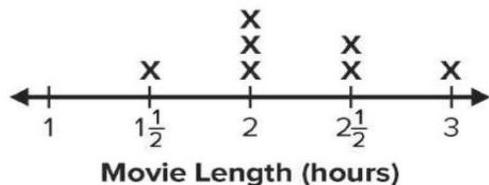
225 square inches; I found half the amount of border material, which is 30 inches. Then I found pairs of addends that equal 30. Then I multiplied to find the products of the addends.

9. **STEM Connection** Sam designs a rectangular building. The area is 360,000 square feet. The length of the building is 900 feet. What are 3 possible widths? Explain.

400 feet; 300 feet; 200 feet. The width must be less than 400 feet because the product of 900 and 400 is 360,000.



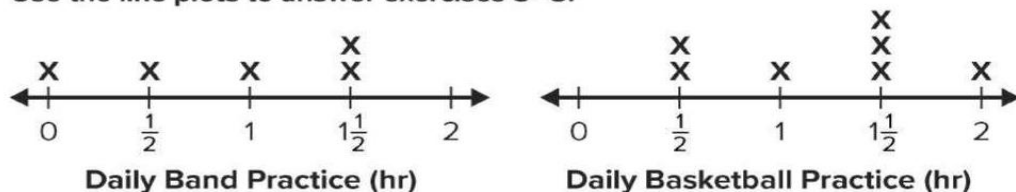
Use the line plot for exercises 1–4.



- What is the difference between the lengths of the longest movie and the shortest movie? $1\frac{1}{2}$ hours
- What is the combined length of the shortest movie and the longest movie? $4\frac{1}{2}$ hours
- How long would you need to watch all the movies? $15\frac{1}{2}$ hours
- If the two longest movies were playing one right after the other, would you be able to watch both movies in 5 hours? Explain.

No. \therefore It would take $5\frac{1}{2}$ hours to watch the two longest movies.

Use the line plots to answer exercises 5–8.

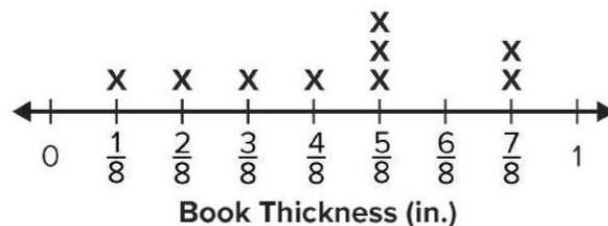


- How many hours were spent practicing band? $4\frac{1}{2}$ hours
- How many hours were spent practicing basketball? $8\frac{1}{2}$ hours
- If you wanted to practice both activities for the same amount of time each week, which activity would you need to practice more? By how much? **Band; Four additional hours each week.**
- How much time was spent practicing both activities throughout the week? **13 hours**

Use the line plot to answer exercises 9–11.

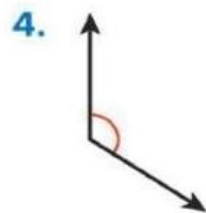
- What is the difference in thickness between the thickest book and the thinnest book?

$\frac{6}{8}$ inch



- What is the combined thickness of the $\frac{5}{8}$ -inch books? $1\frac{7}{8}$ inches

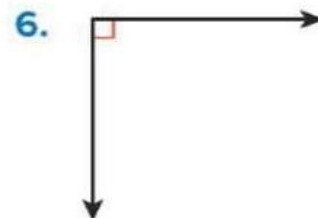
How can you classify the angle? Explain your thinking.



Obtuse;
The angle measure is greater than the measure of a right angle.



Acute;
The angle measure is less than the measure of a right angle.



Right;
The amount of rotation is equal to $\frac{1}{4}$ of a whole circle.

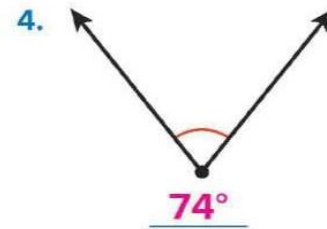
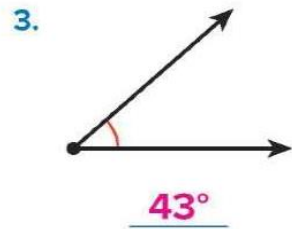
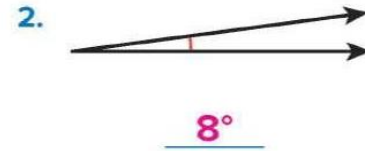
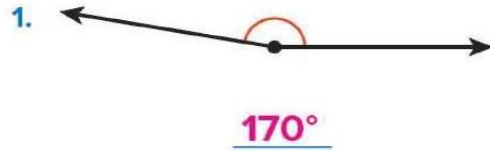
Draw the angle.

7. Right

8. Acute

9. Obtuse

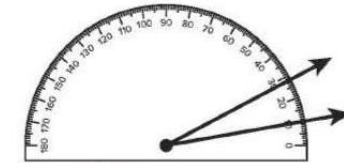
What is the measure of the angle? Use a protractor.



9. Alex drew an obtuse angle. Which of the following could be its measure?

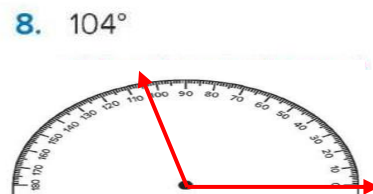
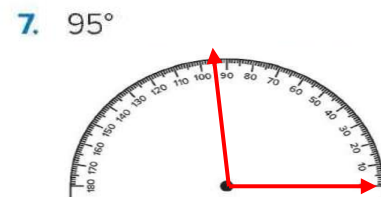
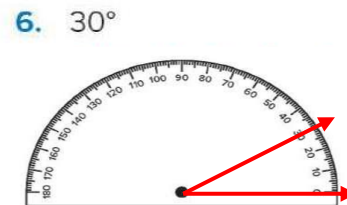
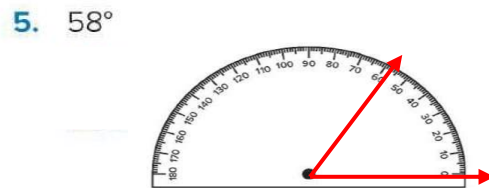
- A. 127° B. 34° C. 90° D. 78°

10. **Error Analysis** Erica states that the angle shown has a measure of 28°. How do you respond to Erica?



I disagree with Erica. She lined up one ray of the angle with 10 degrees, not 0 degrees, so the angle measure is not equal to 28 degrees. It is equal to the difference of 28 degrees and 10 degrees, or 18 degrees.

Use a protractor to draw the angle.

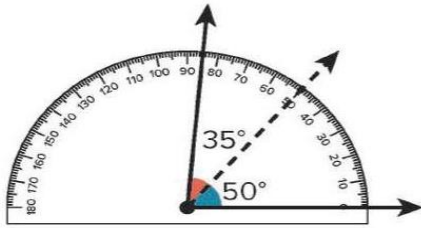


11. **Extend Your Thinking** Draw an obtuse, right, and acute angle. Use a protractor to measure the angles, and label as obtuse, right, or acute.

19	Decompose an angle into two or more angles and recognize that the whole angle is the sum of the decomposed angles	(1-5)	233
		20	259

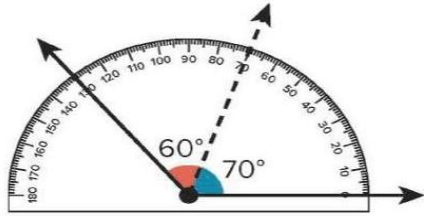
What is the sum of the two angles?

1.



85°

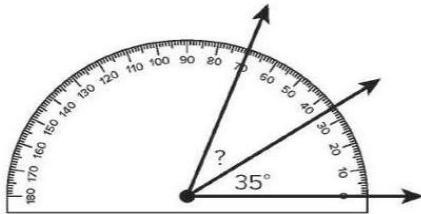
2.



130°

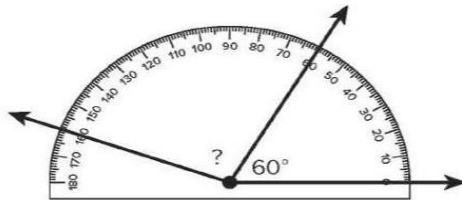
What is the measure of the unknown angle?

3.



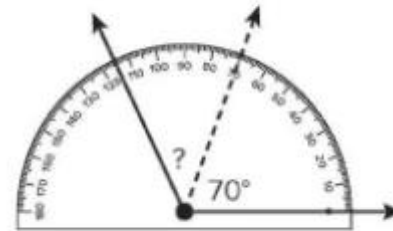
35°

4.



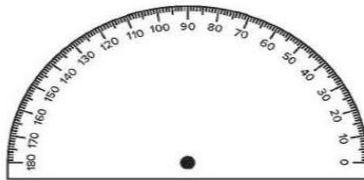
100°

20. What is the measure of the unknown angle? (Lesson 14-5)



45°

5. Gabriela drew a ray inside an obtuse angle to partition the angle into two acute angles. What is a possible measure of the obtuse angle and the two acute angles? Use the protractor to draw the angles.



Match the quadrilateral with its attributes.

-
1. rhombus — A parallelogram with 4 equal sides
2. trapezoid — A quadrilateral with exactly one pair of parallel lines
3. square — A parallelogram with 4 right angles and 4 equal sides
4. parallelogram — A quadrilateral with two pairs of parallel lines
5. rectangle — A parallelogram with 4 right angles and 2 pairs of equal sides

What decimal represents the total amount of money?

1. 
\$ 1.24

2. 
\$ 5.33

3. 
\$ 7.46

4. 
\$ 2.12

5. Marnie has the amount shown. Her mom gives her a one-dollar bill and 2 dimes. How much money does Marnie have now?



\$6.82

6. John has the amount shown. He spends \$1.25. How much money does John have now?



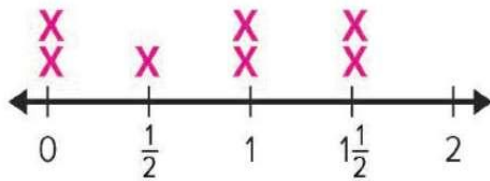
\$1.23

7. Sergio wants to buy a snack for \$1.75. He has a one-dollar bill, 6 dimes, and 7 pennies. Does he have enough money to buy the snack? Explain.

No; Sergio has \$1.67 and $\$1.67 < \1.75 .

Use the data for exercises 5 and 6.

5. The table shows the time Jackson spent practicing the saxophone each day. Display the data on a line plot.



Saxophone Practice (hours)

6. How many hours did Jackson practice in all?

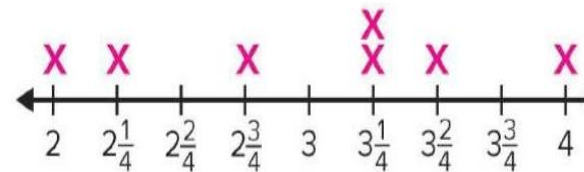
$5\frac{1}{2}$ hours

Saxophone Practice (hours)	
Monday	$1\frac{1}{2}$
Tuesday	0
Wednesday	$\frac{1}{2}$
Thursday	1
Friday	1
Saturday	0
Sunday	$1\frac{1}{2}$

Unit 13 • Units of Measurement and Data 201

The table shows the distances Kireka's family hiked each day during a family vacation. Use the data in the table for exercises 7–10.

7. Draw a line plot to display the data.



Distance Hiked (miles)

Distance Hiked (miles)	
Monday	$3\frac{1}{4}$
Tuesday	2
Wednesday	$3\frac{2}{4}$
Thursday	$2\frac{1}{4}$
Friday	4
Saturday	$2\frac{3}{4}$
Sunday	$3\frac{1}{4}$

8. Which distance was most frequently hiked?

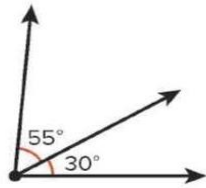
$3\frac{1}{4}$ miles

9. What is the difference between the longest and shortest distance Kireka's family hiked?

2 miles

What is the combined angle measure? Show your work.

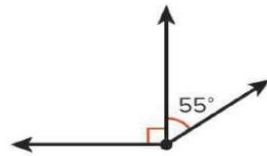
1.



$$85^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$30^\circ + 55^\circ = 85^\circ$$

2.

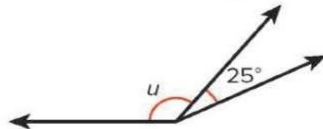


$$145^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$90^\circ + 55^\circ = 145^\circ$$

What is the unknown angle measure? Write an equation to show your work.

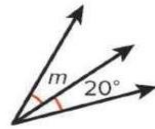
3. The sum of the angles is 155°.



$$130^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$u + 25^\circ = 155^\circ$$

4. The sum of the angles is 45°.



$$25^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$m + 20^\circ = 45^\circ$$

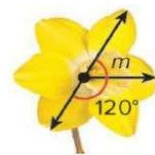
5. The sum of the angles is 72°.



$$36^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$p + 36^\circ = 72^\circ$$

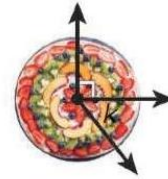
6. The sum of the angles is 180°.



$$60^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$m + 120^\circ = 180^\circ$$

7. The combined angle measure is 140°.



$$k = 50^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$k + 90^\circ = 140^\circ$$

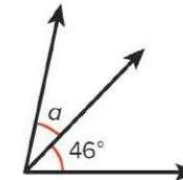
8. The combined angle measure is 133°.



$$x = 86^\circ; \quad \underline{\hspace{2cm}} \quad ;$$

$$x + 47^\circ = 133^\circ$$

9. STEM Connection The drawing represents the turn made by one of Antonio's robots. The total turn measures 78°. What is the measure of angle a ? $a = 32^\circ$



10. An angle that measures 65° is partitioned into two smaller angles. The first angle measures 22°. What is the measure of the second angle? Write an equation to solve.

$$43^\circ; \quad \underline{\hspace{2cm}} \quad ; \quad 22^\circ + p = 65^\circ$$

11. **Extend Your Thinking** Draw an angle that has been divided into three smaller angles. Label two of the angle measures and the combined angle measure. Use an equation to represent the measure of the unknown angle. Then solve.