Session 1

Answer questions 1–14 in your test book.

1. Elaine and Rocco shared a bag of popcorn. Rocco ate $\frac{5}{8}$ of the bag of popcorn and Elaine ate $1\frac{3}{8}$ cups of popcorn. How much popcorn did Elaine and Rocco eat in all?

   Ⓐ $1\frac{5}{8}$ cups

   Ⓑ 2 cups

   Ⓒ The fractions cannot be combined because the numerators are not the same.

   Ⓓ The fractions cannot be combined because they do not represent the same whole.
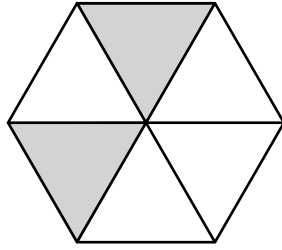
2. Round the number 543,457 to the nearest thousand.

   Enter your answer in the box.

3. Jake rode 5 miles on his bicycle. His father biked 5 times as many miles. Which equation shows the number of miles Jake's father biked?

   Ⓐ $5 \times 5 = 25$

   Ⓑ $5 + 5 = 10$

   Ⓒ $5 \div 5 = 1$

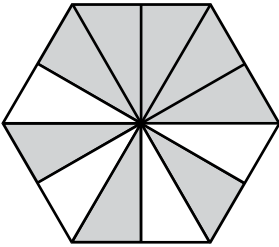   Ⓓ $5 - 5 = 0$

GO ON ▶

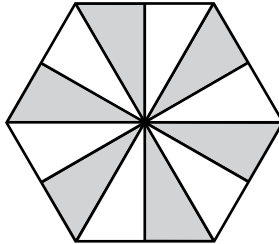4. The shaded part of this hexagon represents a fraction of the whole.

Which hexagons are shaded to represent the same fraction?
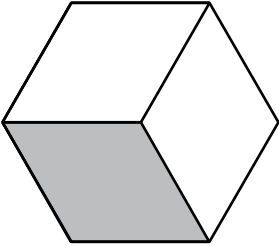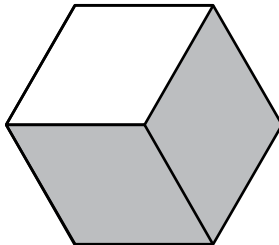
Select the **three** correct answers.
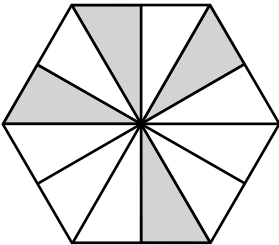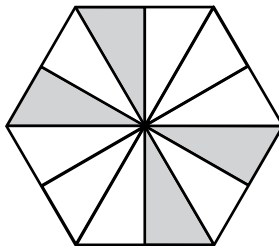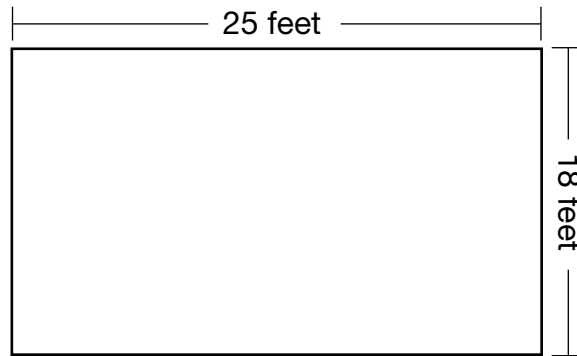
Ⓐ

Ⓓ

Ⓑ

Ⓔ

Ⓒ

Ⓕ

5. Jamie wants to put a fence around his rectangular garden. The diagram below shows the size of his garden.

25 feet

18 feet

[not drawn to scale]

How many feet of fencing will Jamie need?

Enter your answer in the box.

GO ON ▶

6. How many acute angles are in this figure?
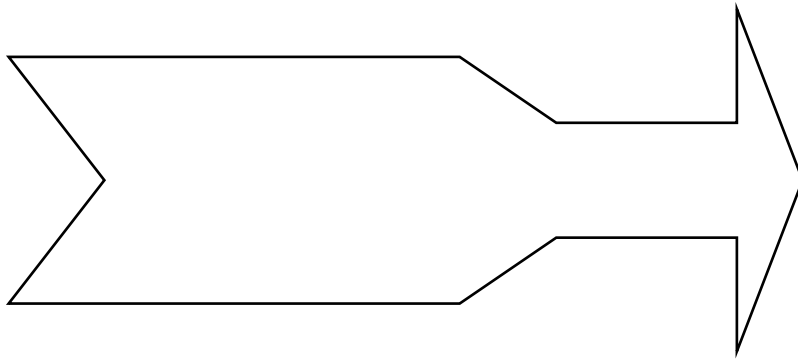
Enter your answer in the box.

7. Which correctly compares the values of the digits 2 and 6 in the number 243,695?

Ⓐ $2 \times 100 < 6 \times 100$

Ⓑ $2 \times 1{,}000 > 6 \times 100$

Ⓒ $2 \times 10{,}000 > 6 \times 100$

Ⓓ $2 \times 100{,}000 > 6 \times 100$

8. Which **three** numbers could be terms in this pattern?

22, 28, 34, 40, …

Ⓐ 50

Ⓑ 52

Ⓒ 58

Ⓓ 65

Ⓔ 70

Ⓕ 72

9. Each model represents a fraction.
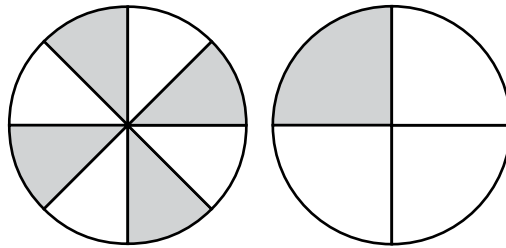
Model 1   Model 2

Which correctly compares the two fractions?

Ⓐ $\frac{4}{4} < \frac{1}{4}$

Ⓑ $\frac{4}{8} > \frac{1}{3}$

Ⓒ $\frac{4}{8} > \frac{1}{4}$

Ⓓ $\frac{4}{8} < \frac{1}{4}$
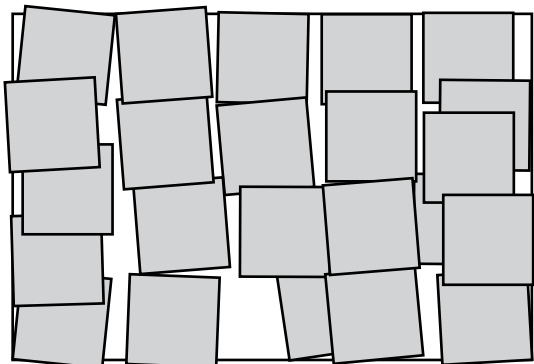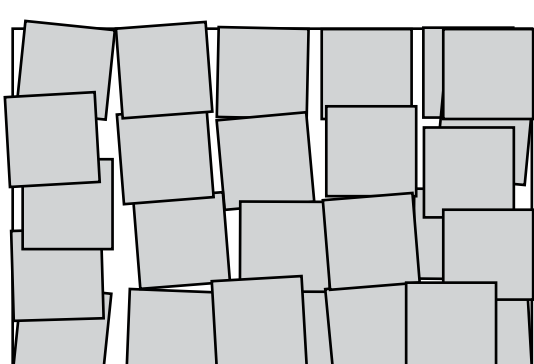
GO ON ▶

10. Elinor and her sister Kate have a dollhouse kit. It contains a bag of carpet squares to cover the area of the first floor. The carpet squares each measure 1 square inch.

Part A
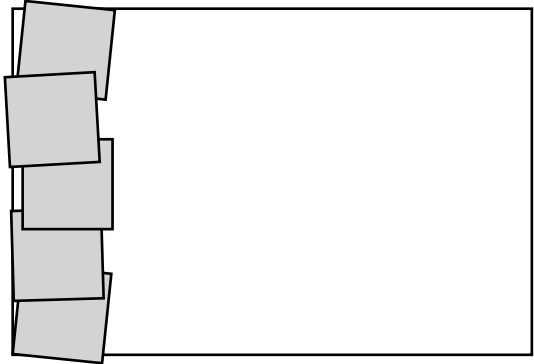
Elinor places carpet squares on the dollhouse floor and tells Kate the area of the floor is 26 square inches.

Elinor explains her reasoning.

First, I place 5 squares along one side of the floor.	
Then I start to cover the rest of the floor. I make sure all of the squares are touching another square.	
I see some big gaps, so I cover them with more squares. I used 26 squares to cover the floor. Each carpet square measures 1 square inch. That means the area of the floor is equal to 26 square inches.	

Identify the two mistakes in Elinor's reasoning.

Then explain how she can use the carpet squares to completely cover the area of the dollhouse floor.

Enter your answer and your explanation in the box provided.

GO ON ▶

Part B

Kate finds that exactly 6 squares can fit along the length of the floor and exactly 4 squares can fit along the width of the floor.

Draw squares on a rectangle to show how Kate covers the floor correctly with the carpet squares.

What is the area of the floor?

Enter your answer and your explanation in the box provided.

11. Ruby is making a walkway with bricks. The bricks come in crates of 50. Ruby needs 6 bricks to make 1 foot of the walkway.

Part A

How many feet of walkway can Ruby make with 3 crates of bricks?

Enter your answer in the box.

Part B

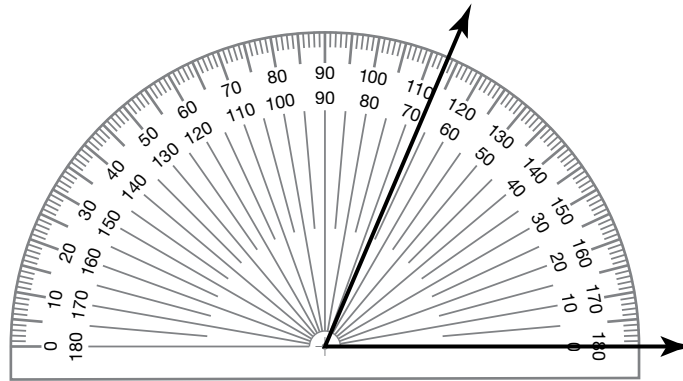Ruby orders 7 crates of bricks. She uses a wagon to move 9 bricks at a time.

How many trips will she make to move all of the bricks?

Show your work. Explain your answer.

Enter your answer and explanation in the box provided.

GO ON ▶

12. The diagram shows an angle being measured.

How many degrees does the angle measure?

Enter your answer in the box.

13. **Part A**

What is the sum of $\frac{3}{10}$ and $\frac{5}{100}$?

Ⓐ $\frac{35}{100}$

Ⓑ $\frac{53}{100}$

Ⓒ $\frac{35}{10}$

Ⓓ $\frac{53}{10}$

Part B

What is the sum of $\dfrac{75}{100}$ and $\dfrac{8}{10}$?

Ⓐ $\dfrac{155}{200}$

Ⓑ $\dfrac{83}{110}$

Ⓒ $\dfrac{83}{100}$

Ⓓ $\dfrac{155}{100}$

14. A bracelet costs $15. A matching necklace costs 3 times as much as the bracelet. How many dollars does the necklace cost?

Enter your answer in the box.

STOP

Session 2

Answer questions 15–28 in your test book.

15. Sage and Reed paint a wall together. They start with $\frac{7}{8}$ gallon of paint.

    Sage uses $\frac{1}{8}$ gallon of paint. Reed uses $\frac{3}{8}$ gallon of paint. How much paint is left?
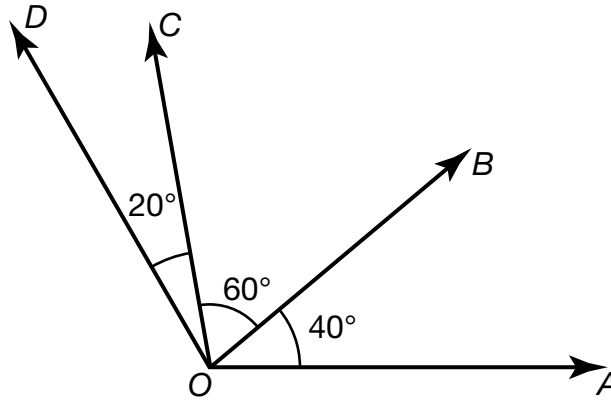
    Ⓐ $\frac{3}{8}$ gallon

    Ⓑ $\frac{4}{8}$ gallon

    Ⓒ $\frac{5}{8}$ gallon

    Ⓓ $\frac{6}{8}$ gallon

16. How many degrees does $\angle DOA$ measure?

    Enter your answer in the box.

17. What is the difference?

Part A

$$8,105 - 3,946$$

Ⓐ 4,159

Ⓑ 4,269

Ⓒ 5,259

Ⓓ 5,841

Part B

$$13,904 - 7,662$$
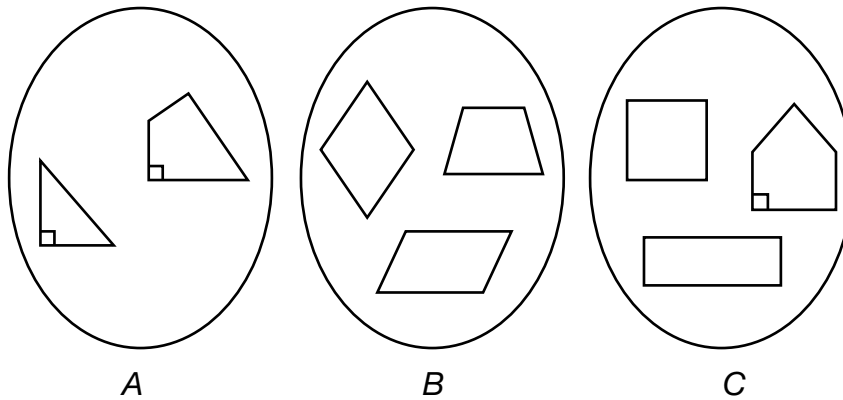
Ⓐ 6,242

Ⓑ 6,262

Ⓒ 6,342

Ⓓ 6,362

18. Look at this model.
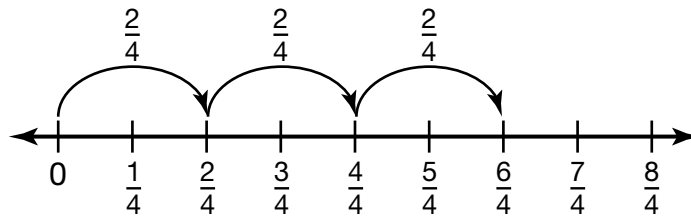
Which product is equivalent to the product shown by the model?

Ⓐ $3 \times \dfrac{1}{4}$

Ⓑ $6 \times \dfrac{1}{4}$

Ⓒ $2 \times \dfrac{2}{4}$

Ⓓ $3 \times \dfrac{3}{4}$

GO ON ▶

19. Mr. Anthony sorted shapes into three groups. He then asked students to describe each group based on the shapes inside it.

What description should the students use for Group *B*?

Ⓐ   All have two pairs of parallel sides.

Ⓑ   All are quadrilaterals.

Ⓒ   All have pairs of perpendicular sides.

Ⓓ   All have pairs of parallel sides and pairs of perpendicular sides.

20. The table shows the numbers of different types of DVDs in Clint's collection. He can fit up to 9 DVDs on a shelf.

Movie Type	Number of DVDs
Comedy	30
Mystery	25
Adventure	16

Part A

What is the minimum number of shelves needed to hold all of his comedy and mystery DVDs?
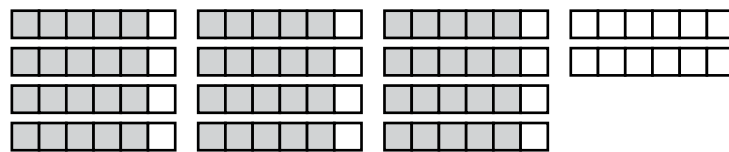
Ⓐ   6

Ⓑ   7

Ⓒ   8

Ⓓ   9

Part B

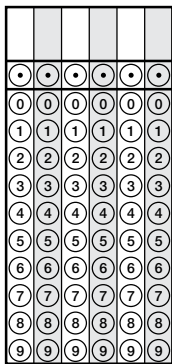What is the minimum number of shelves needed to hold all of his DVDs?

Ⓐ 7

Ⓑ 8

Ⓒ 9

Ⓓ 10

21. Samantha has 14 yards of ribbon. She uses $\frac{5}{6}$ yard of ribbon to decorate each of 12 wrapped presents. The total amount of ribbon she used is modeled in the diagram below.

How many yards of ribbon does Samantha have left?

Enter your answer in the box.

22. A bakery makes 640 muffins every day. Which equation shows a way to find the number of muffins the bakery makes in a week?

Ⓐ $600 + (40 \times 7) = 600 + 280$

Ⓑ $(600 \times 7) + 40 = 4{,}200 + 40$

Ⓒ $(60 \times 7) + (40 \times 7) = 420 + 280$

Ⓓ $(600 \times 7) + (40 \times 7) = 4{,}200 + 280$

GO ON ▶

23. Look at this equation.

$$4\frac{6}{12} = \rule{1.5cm}{0.4pt} + \frac{6}{12}$$

Which **three** expressions could be used to complete the equation?

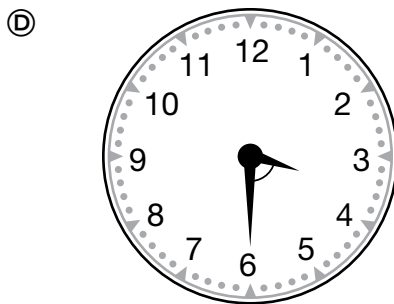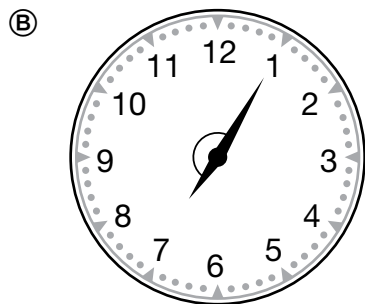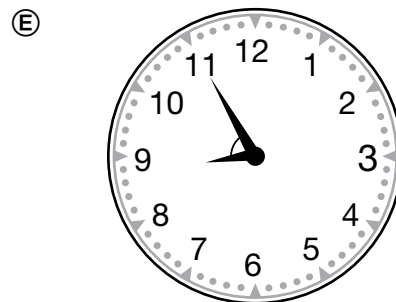Ⓐ $1 + 1 + 1 + \dfrac{6}{12}$

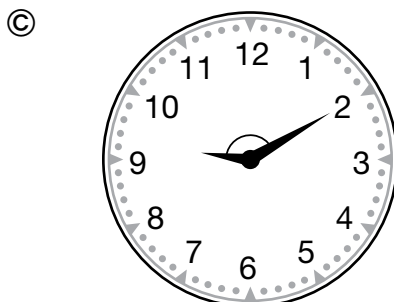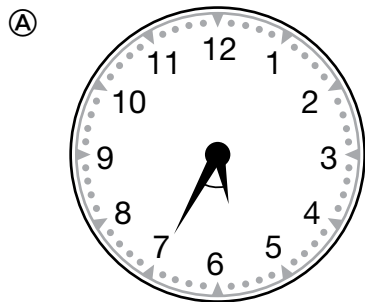Ⓑ $1 + 1 + 1 + \dfrac{12}{12}$

Ⓒ $\dfrac{6}{12} + \dfrac{6}{12} + \dfrac{6}{12} + \dfrac{6}{12}$

Ⓓ $\dfrac{12}{12} + \dfrac{12}{12} + \dfrac{12}{12} + \dfrac{12}{12}$

Ⓔ $1 + 1 + 1 + \dfrac{6}{12} + \dfrac{6}{12}$

24. Look at the angle made by the hands on each clock. Which angles are greater than a right angle?

Select the **two** correct answers.

Ⓐ

Ⓒ

Ⓔ

Ⓑ

Ⓓ

25. Abigail wants to make 50 necklaces to sell at a craft fair. Each necklace has 11 beads. Abigail buys 18 bags of beads. Each bag has 30 beads.

Write a multiplication equation to show how many beads Abigail needs for 50 necklaces.

Then, write a multiplication equation to show how many beads Abigail buys.

Does Abigail buy enough beads for all of the necklaces? Explain your answer.

Enter your answers and explanation in the box provided.

26. Kerri plants some sunflower seeds in equal rows of 6 seeds each.

Which **two** choices could be the total number of seeds Kerri plants?

Ⓐ 56 seeds

Ⓑ 66 seeds

Ⓒ 76 seeds

Ⓓ 88 seeds

Ⓔ 96 seeds

GO ON ▶

27. Mateo rode his bike 0.72 mile from his house to the park. Dean rode his bike 0.68 mile from his house to the same park. Mateo says he rode a greater distance than Dean.

Plot and label points on the number line to model the distances they rode.

Use *M* for Mateo and *D* for Dean.
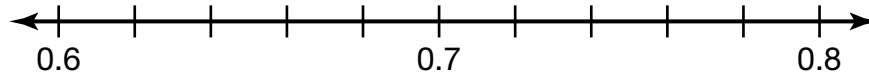
Is Mateo correct? Use the model to explain.

Enter your explanation in the box provided.

28. Medfield's population can be written as $100,000 + 7,000 + 300 + 80 + 9$.

Which **two** numbers below are greater than Medfield's population?

Ⓐ one hundred seven thousand, eight hundred

Ⓑ one hundred seven thousand, ninety-four

Ⓒ one hundred ten thousand, two hundred twelve

Ⓓ one hundred six thousand, seven hundred eighty

Ⓔ one hundred seven thousand, three hundred ten

STOP

Answer questions 29–40 in your test book.

29. Which of these numbers are prime numbers?

    Select the **three** numbers that are prime.

    Ⓐ 5

    Ⓑ 11

    Ⓒ 27

    Ⓓ 31

    Ⓔ 33

30. What is the value of $9{,}782 - 3{,}891 + 2{,}715$?

    Ⓐ 5,891
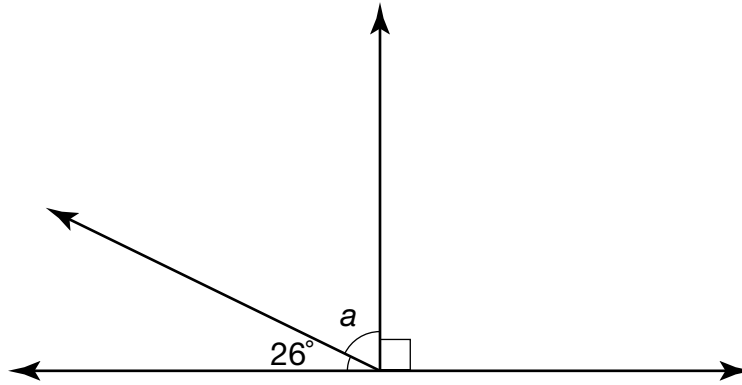
    Ⓑ 6,826

    Ⓒ 6,991

    Ⓓ 8,606

31. Which equations are correct?

    Select the **two** correct answers.

    Ⓐ $2 \times \dfrac{1}{3} = \dfrac{2}{3}$

    Ⓑ $5 \times \dfrac{1}{8} = 5\dfrac{1}{8}$

    Ⓒ $\dfrac{1}{6} \times 4 = \dfrac{4}{6}$

    Ⓓ $\dfrac{1}{4} \times 6 = \dfrac{4}{3}$

    Ⓔ $\dfrac{1}{2} \times 3 = 3\dfrac{1}{2}$

GO ON ▶

32. Pria draws these angles.

What is the measure of angle *a* in degrees?

Enter your answer in the box.

33. While on vacation, Samantha bought 6 postcards to send to her friends. She bought twice as many postcards as Nathan bought. How many postcards did Nathan buy?

Enter your answer in the box.

34. Stella shares a bag of 12 apples with her friends. She gives $\frac{3}{12}$ of the apples to Deion, $\frac{1}{12}$ of the apples to Ruth, and $\frac{4}{12}$ of the apples to Helena. What fraction of the apples does Stella share with her friends?

Ⓐ $\frac{4}{12}$

Ⓑ $\frac{5}{12}$

Ⓒ $\frac{7}{12}$

Ⓓ $\frac{8}{12}$

35. The manager of a plant nursery has 863 green bean plants and 344 yellow bean plants. Can she arrange all of the plants in 7 equal rows? If so, how many plants will be in each row? If not, how many rows will she need for all the plants? Show your work or explain your answer.

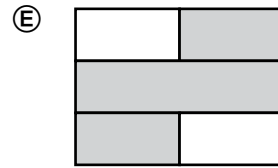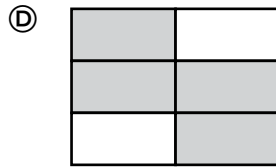Enter your answer and your work or explanation in the box provided.
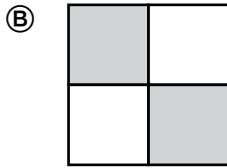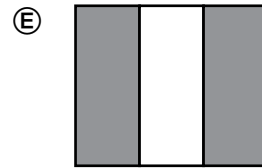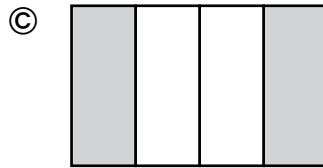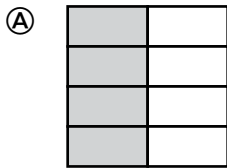
GO ON ▶

36. Anna shades part of this model to represent a fraction.
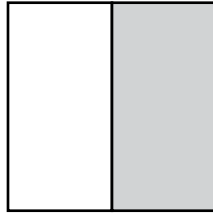
Part A

Which models are shaded to show a fraction equivalent to Anna's fraction?

Select the **three** correct answers.

Ⓐ   Ⓒ   Ⓔ

Ⓑ   Ⓓ   Ⓔ

Part B

Which of these fractions are equivalent to Anna's fraction?

Select the **three** correct answers.

Ⓐ $\dfrac{1}{4}$

Ⓑ $\dfrac{2}{5}$

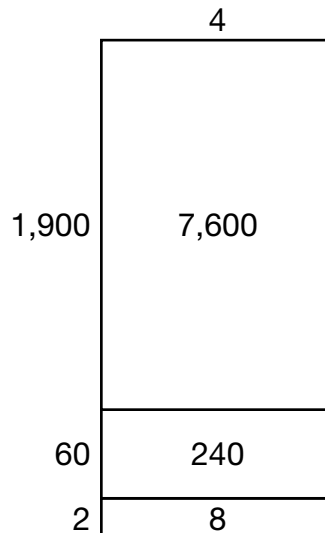Ⓒ $\dfrac{4}{8}$

Ⓓ $\dfrac{5}{10}$

Ⓔ $\dfrac{5}{12}$

Ⓕ $\dfrac{6}{12}$

37. This model shows one way to find the quotient of 7,848 ÷ 4.

	4
1,900	7,600
60	240
2	8

Which equation shows the final step in finding the quotient?

Ⓐ 1,900 + 60 + 2 + 4 + 8 = 1,974

Ⓑ 1,900 + 60 + 2 + 4 = 1,966

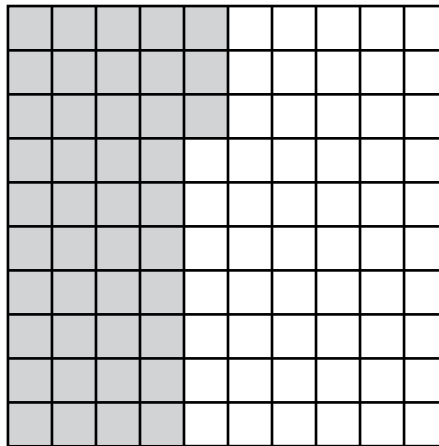Ⓒ 1,900 + 60 + 2 = 1,962

Ⓓ 1,900 − 60 − 2 = 1,838

GO ON ▶

38. Which pairs of equivalent measures could complete the table?

Select the **two** correct answers.

Inches	Feet
60	5
108	9
?	?
1,200	100

Ⓐ 200 inches and 10 feet

Ⓑ 216 inches and 18 feet

Ⓒ 240 inches and 22 feet
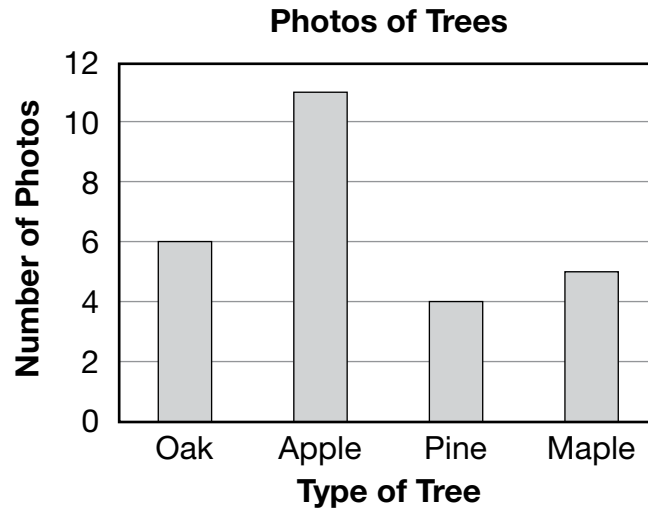
Ⓓ 300 inches and 25 feet

Ⓔ 470 inches and 35 feet

39. The fraction $\frac{43}{100}$ is shown on the model below.

Which decimal does the grid model?

Ⓐ 0.04

Ⓑ 0.40

Ⓒ 0.43

Ⓓ 4.3

40. Jaxon takes photos of trees. The bar graph shows the number of photos for each tree.

Photos of Trees

Part A

How many more apple tree photos than maple tree photos does Jaxon have?

Enter your answer in the box provided.

GO ON ▶

Part B

Henry says that the number of apple tree photos is equal to the number of oak and pine tree photos added together. Is Henry correct? Explain.

Enter your answer and your explanation in the box provided.

Part C

Jaxon also takes photos of cars. He has photos of 5 black cars, 8 green cars, 15 red cars, and 10 blue cars.

Make a bar graph to show the number of Jaxon's car photos.

Enter your work in the box provided.

STOP