Part 1 – Multiplying Fractions with Area Models

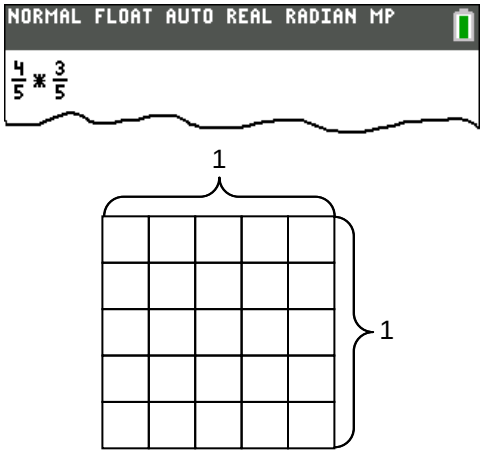
For each exercise, draw an **area model** representation of the multiplication. Report all fractions in lowest terms.

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

Press the green ALPHA key, then Y= for [F1]. Choose the fraction template by pressing ENTER. Type the numerator 4. Press ► 5 to type the denominator 5. Press ► to move out of the denominator and multiply. Press ×. Press ALPHA [F1] ENTER 3 to type the numerator of the second fraction, 3. Press ► 5 to type the denominator 5. Press ENTER.

Write the fraction. _____

What percent of the 1 by 1 square is shaded? _____

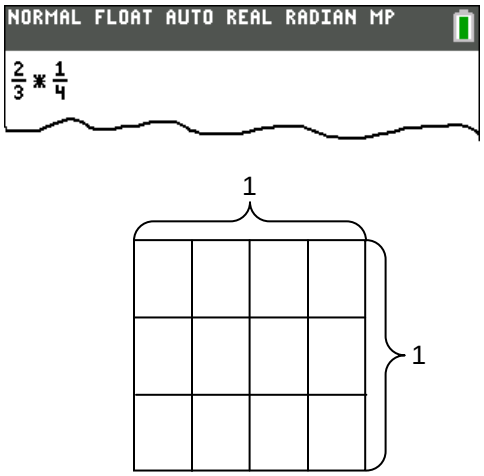


2. Multiply $\frac{2}{3} \times \frac{1}{4}$.

Press ALPHA [F1] ENTER 2 to type the numerator 2. Press ► 3 to type the denominator 3. Press ► to move out of the denominator and multiply. Press ×. Press ALPHA [F1] ENTER 1 to type the numerator of the second fraction, 1. Press ► 4 to type the denominator 4. Press ENTER.

Write the fraction. _____

What percent of the 1 by 1 square is shaded? _____
(Round your answer to the nearest tenth of a percent.)

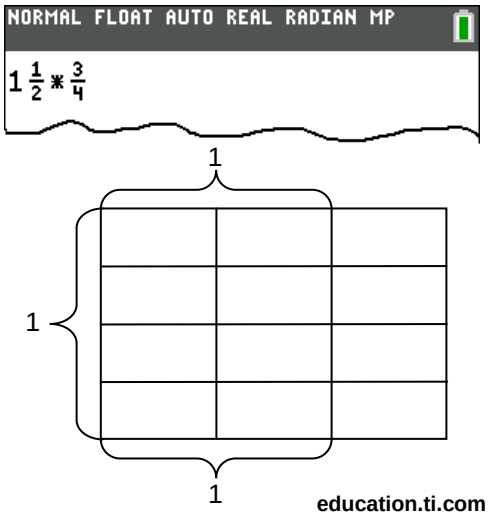


3. Multiply $1\frac{1}{2} \times \frac{3}{4}$.

To get the mixed fraction math template, press ALPHA [F1] and choose the second option. Press 1 ► 1 ► 2. Press ► to move out of the denominator and press ×. To enter the second fraction press ALPHA [F1] ENTER 3 ► 4. Press ENTER.

Write the fraction. _____

What percent of the 1 by 1 square is shaded? _____



Part 2 – Dividing Fractions with Fraction Tiles

Show each division exercise with fraction tiles.

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

Press 2 ÷ ALPHA [F1] ENTER 1 ► 3. Press ENTER.

Write the answer. _____

5. Kara has $\frac{1}{2}$ cup of almond milk left. She uses $\frac{1}{4}$ cup each morning with breakfast. How many breakfast servings does Kara have left?

Press ALPHA [F1] ENTER 1 ► 2. Press ► to move out of the denominator and select ÷. Enter the second fraction, ALPHA [F1] ENTER 1 ► 4. Press ENTER.

Write the answer. _____

6. Write a story problem in which the number 4 is divided by the fraction $\frac{1}{5}$. Use the context of the problem to explain the relationship between multiplication and division.

Part 3 – Multiplying and Dividing Decimals

For Exercises **7, 8, 9,** and **10,** estimate the answer before calculating the value.

7. 26.45 × 0.25

First, my estimate is _____.

Now type 2 6 . 4 5 and multiply this by 0.25 by pressing × 0 . 2 5 ENTER.

26.45 × 0.25 = _____

8. 35.5 ÷ 4.2

First, my estimate is _____.

Now type 3 5 . 5 and select ÷. Enter the second decimal, 4 . 2. Press ENTER.

35.5 ÷ 4.2 ≈ _____
(Round to the nearest thousandth.)

9. 14.25 × 1.0825

First, my estimate is _____.

Use keystrokes similar to those shown in Exercises **7** and **8** to find

14.25 × 1.0825 ≈ _____.
(Round to the nearest thousandth.)

10. 325 ÷ 18.25

First, my estimate is _____.

Use keystrokes similar to those shown in Exercises **7** and **8** to find

325 ÷ 18.25 ≈ _____.
(Round to the nearest thousandth.)

For Exercises **11** and **12,** circle the correct choice.
Explain how you could determine the correct value without a calculator by using estimation.

11. Which of these is 9.85 x 2.4?

A. 2364

B. 236.4

C. 23.64

D. 2.364

12. Which of these is 5006.11 ÷ 52.42?

A. 955

B. 95.5

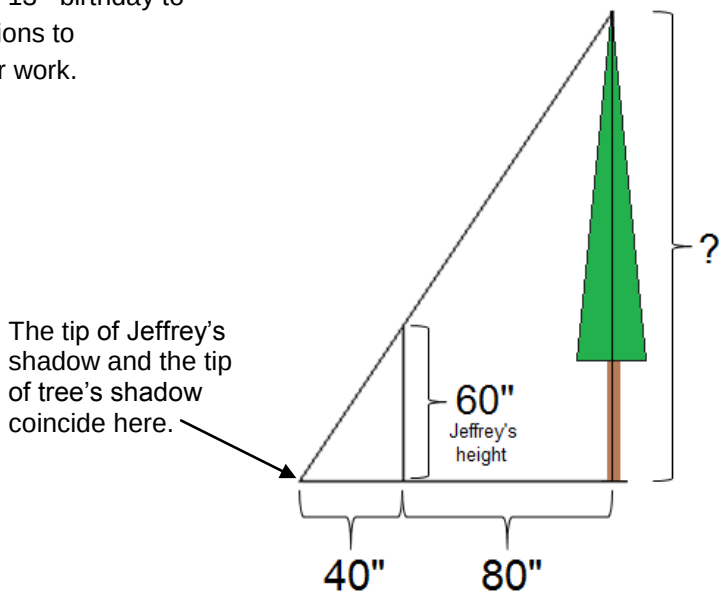
C. 9.55

D. 0.955

Part 4 – Solve Similarity Problems

Use the diagrams to help you solve the problem.

13. When Jeffrey was born, his parents planted a tree in the backyard. He has decided on his 13th birthday to see how tall the tree is. Use proportions to determine the tree height. Show your work.



14. Moriah is 64 inches tall and casts a shadow that is 24 inches long. She is standing next to a billboard that casts a shadow 15 feet long. Use proportions to determine the distance from the ground to the top of the billboard. Show your work.