Estimating with Decimals

ANSWER KEY • Amplify Alignment: Grade 6 Accelerated, Unit 3, Lesson 21

1. **Estimate whether 15 · 0.8 is greater than or less than 15. Explain your thinking.**

   Less than 15. Multiplying by a number less than 1 makes the product smaller than 15.

2. **Estimate whether 3.1 · 3.1 is greater than or less than 9. Explain your thinking.**

   Greater than 9. 3 · 3 = 9, and both factors are a little more than 3.

3. **Estimate whether 4.25 · 5.5 is greater than or less than 20. Explain your thinking.**

   Greater than 20. 4 · 5 = 20, and both factors are greater than 4 and 5.

4. **Select all the expressions that have a value of 8.**

   - ☑ **A.** 4.8 ÷ 0.6
   - ☑ **B.** 0.048 ÷ 0.006
   - ☐ **C.** 0.48 ÷ 6
   - ☐ **D.** $8 \div \frac{1}{10}$
   - ☑ **E.** $\frac{48}{10} \div \frac{6}{10}$

5. **Without calculating, decide which is greater: 24 ÷ 0.8 or 24 ÷ 1.2. Explain your thinking.**

   24 ÷ 0.8 is greater. Dividing by a number less than 1 gives a quotient greater than 24, and dividing by a number greater than 1 gives a quotient less than 24. (24 ÷ 0.8 = 30 and 24 ÷ 1.2 = 20)

6. **Leo estimates that 19.7 · 4.1 is about 80. Is his estimate reasonable? Then find the exact product.**

   Yes. 19.7 is close to 20 and 4.1 is close to 4, and 20 · 4 = 80. Exact product: 80.77

Problems 7–8: Jada listens to an audiobook at 1.25x speed to save time.

7. Complete the table to find how long each chapter takes at 1.25x speed.

	Length at Regular Speed (min)	Length at 1.25x Speed (min)
Chapter 1	40	**32**
Chapter 2	52.5	**42**
Chapter 3	61	**48.8**

8. It takes Jada 29.6 minutes to listen to Chapter 4 at 1.25x speed. How long is Chapter 4 at regular speed?

A 23.68 minutes **B** 30.85 minutes **C** 37 minutes **D** 36 minutes

Problems 9–10: Ray is watching a 60-minute recorded lesson.

9. Ray watches the lesson at 0.75x speed. How long does it take? **80 minutes**

10. How long does the lesson take if Ray watches it at 1.5x speed?

A 40 minutes **B** 45 minutes **C** 50 minutes **D** 90 minutes