

Lesson 2-5

Thursday, September 26, 2019 6:48 PM

Name _____

MB 83



Lesson 2-5

Subtract Decimals

Solve & Share

Ms. Garcia is an electrician and has a length of wire that is 32.7 meters long. She has another length of wire that is 15.33 meters long. How much longer is one wire than the other? *Solve this problem any way you choose.*

I can ...

subtract decimals using the standard algorithm.

Content Standard 5.NBT.B.7
Mathematical Practices MP.1, MP.3, MP.4, MP.7, MP.8

$$* 32.7 = 32.70$$

You can generalize what you know about whole number subtraction to subtract decimals.



$$\begin{array}{r} 32.7 \text{ m} \\ - 15.33 \text{ m} \\ \hline 32.7 - 15.33 = 17.37 \\ 30 - 15 \approx 15 \end{array}$$

$$\begin{array}{r} 2 \text{ } 12 \text{ } 6 \text{ } 10 \\ 32.70 \\ - 15.33 \\ \hline 17.37 \end{array}$$

17.37 m. longer

Look Back! **MP.7 Use Structure** How can you use addition to check the problem about Ms. Garcia's wires?

17.37, the difference, is added to the number that was taken away, 15.33.

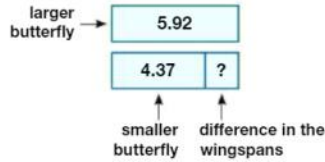
$$\begin{array}{r} 17.37 \\ + 15.33 \\ \hline 32.70 = 32.7 \end{array}$$

Essential Question: How Can You Subtract Decimals?

What is the difference in the wingspans of the two butterflies?



Estimate before you find the exact answer.
 $6 - 4 = 2$



Step 1
Write the numbers, lining up the decimal points.

$$\begin{array}{r} 5.92 \\ -4.37 \\ \hline \end{array}$$



Step 2
Subtract the hundredths. Regroup if needed.

$$\begin{array}{r} 5.\overset{8}{9}\overset{12}{2} \\ -4.37 \\ \hline 1.55 \end{array}$$

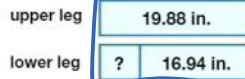
You can use subtraction to compare numbers!

Step 3
Subtract the tenths and ones. Bring down the decimal point.

$$\begin{array}{r} 5.\overset{8}{9}\overset{12}{2} \\ -4.37 \\ \hline 1.55 \end{array}$$

The difference in the wingspans is 1.55 centimeters.
The estimate was 2, so the difference is reasonable.

Convince Me! **MP.4 Model with Math** An average adult's upper leg measures 19.88 inches, and the lower leg measures 16.94 inches. How much longer is the upper leg than the lower leg? Use a bar diagram to help.



$$19.88 - 16.94 = ?$$

$20 - 17 \approx 3$

2.94 in. longer

$$\begin{array}{r} 19.\overset{8}{8}\overset{16}{88} \\ -16.94 \\ \hline 2.94 \end{array}$$

★ Guided Practice ★

Do You Understand?

1. **Number Sense** Explain why 1.55 centimeters is a reasonable answer for the difference in the wingspans of the two butterflies.

1.55 cm is close to the estimate 2 cm

2. Maria rewrote $45.59 - 7.9$ as $45.59 - 7.90$. Is the value of 7.9 changed by annexing a zero after 7.9? Why or why not?

No! 7.9 and 7.90 are equivalent decimals

Do You Know How?

In 3-10, subtract the decimals.

3. $16.82 - 5.21$

4. $7.21 - 6.1$

5. $23.06 - 8.24$

$1 \overline{) 6.26 - 10 \approx 15}$
 $6.26 - 10 \approx 15$
 14.82

7. $56.8 - 2.76$

8. $\$43.80 - \16.00

9. $22.4 - 10.7$

10. $\$36.40 - \21.16

56.80
 $- 2.76$
 54.04

7.21
 $- 6.1$
 1.11

1.01

$40 - 20 \approx 20$

310
 $\$36.40$
 $- \$21.16$
 $\$15.24$

Complete: 25, 26, 27, 28, 31

★ Independent Practice ★

Leveled Practice In 11-26, subtract to find the difference.

11. $7.8 - 4.9$
 $.9$

12. $\$20.60 - \14.35
 $\$.2$

13. $43.90 - 7.52$
 3.8

14. $65.9 - 28.38$
 3.5

15. $15.03 - 4.12$

16. $13.9 - 3.8$

17. $65.18 - 12.05$

18. $\$52.02 - \0.83

19. $7.09 - 3.65$

20. $34.49 - 12.61$

21. $85.22 - 43.5$

22. $\$10.05 - \4.50

23. $5.27 - 3.4$

24. $23.6 - 8.27$

25. $8.04 - 0.3$

26. $\$21.37 - \10.95

$8 - 0.3 \approx 7.5$
 7.04
 $- 0.30$
 7.74

$21 - 11 \approx 10$
 $\$21.37$
 $- \$10.95$
 $\$10.42$

*For another example, see Set D on page 104

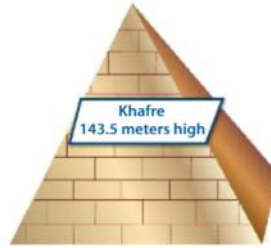
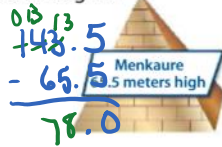
Math Practices and Problem Solving

27. **Algebra** The Pyramid of Khafre measured 143.5 meters high. The Pyramid of Menkaure measured 65.5 meters high. Write and solve an equation to find d , the difference in the heights of these two pyramids.

$$143.5 - 65.5 = d$$

$$150 - 75 \approx 75$$

$$d = 78 \text{ m.}$$



28. **Higher Order Thinking** Jonah bought a 1.5-liter bottle of seltzer. He used 0.8 liter of seltzer in some punch. Which is greater, the amount he used or the amount he has left? Explain how you decided.

$$1.5 - 0.8 = x$$

$$x = 0.7$$

The amount used is greater.
 $0.8 > 0.7$

$$\begin{array}{r} 1.5 \\ - 0.8 \\ \hline 0.7 \end{array}$$

29. **MP.3 Critique Reasoning** Sue subtracted 2.9 from 20.9 and got 1.8. Explain why this is not reasonable.

30. **MP.1 Make Sense and Persevere**

Abe had \$156.43 in his bank account at the beginning of the month. He made the two withdrawals shown in his check register. How much money does he have left in his bank account? He must have at least \$100 in his account by the end of the month or he will be charged a fee. How much money does he need to deposit to avoid being charged a fee?

| Date | Deposit | Withdrawal | Balance |
|------|---------|------------|---------|
| 9/1 | 17.85 | | 156.43 |
| 9/8 | | 24.97 | |
| 9/10 | | 39.41 | |



Common Core Assessment

31. Which two subtraction problems have a difference of 1.65? Write those subtraction problems in the box.

| Difference = 1.65 | |
|-------------------|-----------------|
| $11.23 - 9.58$ | $21.74 - 20.09$ |
| $27.30 - 16.65$ | $12.23 - 9.58$ |
| $40.4 - 23.9$ | $12.68 - 2.03$ |
| | $21.74 - 20.09$ |

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$$27.30 - 16.65$$

$$27 - 17 \approx 10$$

$$11.23 - 9.58$$

$$11 - 10 \approx 1$$

$$40.4 - 23.9$$

$$40 - 20 \approx 20$$

$$21.74 - 20.09$$

$$22 - 20 \approx 2$$

$$\begin{array}{r} 11.23 \\ - 9.58 \\ \hline 1.65 \end{array}$$

$$12.68 - 2.03$$

$$13 - 2 \approx 11$$

$$\begin{array}{r} 21.74 \\ - 20.09 \\ \hline 1.65 \end{array}$$