

Multiplying and Dividing Integers

Name: _____

Date: _____

Score: _____ / 18

Quick Review and Helpful Hints

When you multiply or divide two integers, only the signs decide the result's sign: *same signs give a positive, different signs give a negative.* Multiply or divide the absolute values, then attach the correct sign. (For several factors, an even number of negatives is positive, an odd number is negative.)

▷ **Example:** Evaluate $(-4)(-5)$ and $(-12) \div 3$. **Work:** Same signs in $(-4)(-5)$: $4 \times 5 = 20$, positive. Different signs in $(-12) \div 3$: $12 \div 3 = 4$, negative.

★ **Answer:** 20 and -4

$$(+)(+) = +$$

$$(-)(-) = +$$

$$(+)(-) = -$$

$$(-)(+) = -$$

Same signs +, different signs -.

Practice Problems

Multiply or divide.

1. $3 \times (-4)$

8. $24 \div (-6)$

2. $(-5)(-2)$

9. $(-9)(2)$

3. $(-6)(3)$

10. $(-36) \div (-9)$

4. $(-20) \div 4$

11. $(-1)(-1)$

5. $(-15) \div (-3)$

12. $5 \times (-5)$

6. $7 \times (-2)$

13. $(-18) \div 3$

7. $(-8)(-4)$

14. $(-2)(3)(-4)$

Word Problems

15. A store loses \$5 each day for 4 days. What is the total change in money?

16. A diver descends a total of -12 feet in 3 equal stages. What is the change per stage?

17. The temperature drops 3° each hour for 6 hours. What is the total change?

18. A debt of $-\$24$ is shared equally among 8 people. What is each person's share?



Answer Keys

- | | | |
|-------------------------------------|--------------------------------------|--|
| 1. <input type="text" value="-12"/> | 7. <input type="text" value="32"/> | 13. <input type="text" value="-6"/> |
| 2. <input type="text" value="10"/> | 8. <input type="text" value="-4"/> | 14. <input type="text" value="24"/> |
| 3. <input type="text" value="-18"/> | 9. <input type="text" value="-18"/> | 15. <input type="text" value="-\$20"/> |
| 4. <input type="text" value="-5"/> | 10. <input type="text" value="4"/> | 16. <input type="text" value="-4 ft"/> |
| 5. <input type="text" value="5"/> | 11. <input type="text" value="1"/> | 17. <input type="text" value="-18°"/> |
| 6. <input type="text" value="-14"/> | 12. <input type="text" value="-25"/> | 18. <input type="text" value="-\$3"/> |

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs give a negative answer. Multiply the values: $3 \times 4 = 12$, then attach the minus: -12 . So the final answer is -12 .

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Same signs give a positive answer: $5 \times 2 = 10$, so 10. So the final answer is 10.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $6 \times 3 = 18$, negative, so -18 . So the final answer is -18 .

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $20 \div 4 = 5$, negative, so -5 . So the final answer is -5 .

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Same signs: $15 \div 3 = 5$, positive, so 5. So the final answer is 5.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $7 \times 2 = 14$, negative, so -14 . So the final answer is -14 .

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Same signs: $8 \times 4 = 32$, positive, so 32. So the final answer is 32.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $24 \div 6 = 4$, negative, so -4 . So the final answer is -4 .

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $9 \times 2 = 18$, negative, so -18 . So the final answer is -18 .

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Same signs: $36 \div 9 = 4$, positive, so 4. So the final answer is 4.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Same signs: $1 \times 1 = 1$, positive, so 1. So the final answer is 1.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $5 \times 5 = 25$, negative, so -25 . So the final answer is -25 .

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $18 \div 3 = 6$, negative, so -6 . So the final answer is -6 .

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Count the negatives – there are two (even), so the result is positive. Multiply the values: $2 \times 3 \times 4 = 24$, so 24. So the final answer is 24.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Each day loses \$5 for 4 days: $4 \times (-5) = -\$20$ total change. So the final answer is $-\$20$.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Split the total descent into equal stages: $-12 \div 3 = -4$ ft per stage. So the final answer is -4 ft.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Each hour drops 3° over 6 hours: $6 \times (-3) = -18^\circ$. So the final answer is -18° .

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Split the debt among the people: $-24 \div 8 = -\$3$ each. So the final answer is $-\$3$.



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