# Integer Multiplication and Division

| Name: _____ | Date: _____ | Score: _____ / 24 |
|---|---|---|

## Quick Review

For multiplying or dividing integers, the **sign rules** are simple. If the two numbers have the **same sign**, the answer is **positive**. If they have **different signs**, the answer is **negative**. So $(-6)(7) = -42$ but $(-8)(-3) = 24$. First multiply or divide the numbers as if they were positive, then attach the correct sign. When you multiply several numbers, count the negative signs: an *even* number of negatives gives a positive, an *odd* number gives a negative.

◇ **Example:** Find $(-8)(-3)$.

⇒ First ignore the signs and multiply the plain numbers: $8 \times 3 = 24$. Now decide the sign. Both factors are negative, which means they have the *same* sign. The same-sign rule tells us the answer is positive. So $(-8)(-3) = 24$. A helpful way to remember: a negative of a negative turns positive, just like $-(-3) = 3$.

**Answer:** $24$

## PRACTICE

*Multiply or divide the integers.*

**1.** $(-6)(7)$ _____

**2.** $(9)(-4)$ _____

**3.** $(-7)(8)$ _____

**4.** $(-11)(5)$ _____

**5.** $(-8)(-3)$ _____

**6.** $(-5)(-5)$ _____

**7.** $(-15)(-2)$ _____

**8.** $(-12)(0)$ _____

**9.** $-36 \div 6$ _____

**10.** $56 \div (-7)$ _____

**11.** $-90 \div 10$ _____

**12.** $64 \div (-16)$ _____

**13.** $-48 \div (-8)$ _____

**14.** $-72 \div (-9)$ _____

**15.** $-100 \div (-25)$ _____

**16.** $-81 \div (-9)$ _____

**17.** $(2)(-5)(3)$ _____

**18.** $(-3)(-4)(-2)$ _____

**19.** $(-4)(-4)(-4)$ _____

**20.** $(-2)^3$ _____

### ♦ Word Problems

**21.** A scuba diver descends $3$ feet every minute. Write a product to find her depth change after $8$ minutes. _____

**22.** A store loses $\$250$ over $5$ equal days. What is the average daily change in money? _____

**23.** A submarine rises at a rate represented by $-6$ feet per minute relative to its dive. Over $-7$ minutes (7 minutes earlier), what was its position change? _____

**24.** A team's total score dropped by $45$ points across $9$ equal rounds. What was the score change per round? _____

# Answer Keys

1. $-42$
2. $-36$
3. $-56$
4. $-55$
5. $24$
6. $25$
7. $30$
8. $0$
9. $-6$
10. $-8$
11. $-9$
12. $-4$
13. $6$
14. $8$
15. $4$
16. $9$
17. $-30$
18. $-24$
19. $-64$
20. $-8$
21. $-24$ feet
22. $-\$50$
23. $42$ feet
24. $-5$ points

## Step-by-Step Explanations

**1.** Different signs give a negative: $6 \times 7 = 42$, so $-42$.
**2.** Different signs give a negative: $9 \times 4 = 36$, so $-36$.
**3.** Different signs give a negative: $7 \times 8 = 56$, so $-56$.
**4.** Different signs give a negative: $11 \times 5 = 55$, so $-55$.
**5.** Same sign gives a positive: $8 \times 3 = 24$.
**6.** Same sign gives a positive: $5 \times 5 = 25$.
**7.** Same sign gives a positive: $15 \times 2 = 30$.
**8.** Anything multiplied by $0$ is $0$.
**9.** Different signs give a negative: $36 \div 6 = 6$, so $-6$.
**10.** Different signs give a negative: $56 \div 7 = 8$, so $-8$.
**11.** Different signs give a negative: $90 \div 10 = 9$, so $-9$.
**12.** Different signs give a negative: $64 \div 16 = 4$, so $-4$.
**13.** Same sign gives a positive: $48 \div 8 = 6$.
**14.** Same sign gives a positive: $72 \div 9 = 8$.
**15.** Same sign gives a positive: $100 \div 25 = 4$.
**16.** Same sign gives a positive: $81 \div 9 = 9$.
**17.** One negative sign (odd), so the product is negative: $2 \times 5 \times 3 = 30$, giving $-30$.
**18.** Three negative signs (odd), so the product is negative: $3 \times 4 \times 2 = 24$, giving $-24$.
**19.** Three negatives (odd) give a negative: $4 \times 4 \times 4 = 64$, so $-64$.
**20.** $(-2)^3 = (-2)(-2)(-2)$; three negatives give a negative $8$, so $-8$.
**21.** Descending $3$ feet is $-3$ per minute, so over $8$ minutes the change is $(-3)(8) = -24$ feet.
**22.** A loss of $\$250$ is $-250$. Divided over $5$ days: $-250 \div 5 = -50$, so $-\$50$ per day.
**23.** $(-6)(-7) = 42$. Two negatives give a positive, so the position change was $+42$ feet.
**24.** A drop of $45$ points is $-45$. Divided over $9$ rounds: $-45 \div 9 = -5$ points per round.

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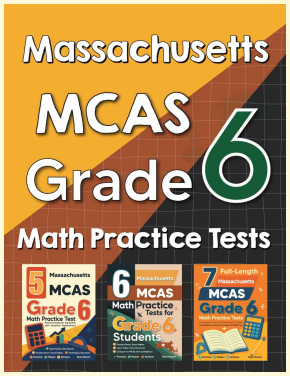


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