SKILL 19: Using Mental Math to Multiply

You can often find products mentally by using the distributive property.

Example 1

Multiply: 2 × 126.

Rewrite 126 as 120 + 6.

$2 \times 126 = 2 \times (120 + 6)$
$= (2 \times 120) + (2 \times 6)$
$= \quad 240 \quad + \quad 12$
$= \quad 252$

Example 2

Multiply: 98 × 63.

$98 \times 63 = 63 \times 98$
$= 63 \times (100 - 2)$
$= (63 \times 100) - (63 \times 2)$
$= \quad 6300 \quad - \quad 126$
$= \quad 6{,}174$

Guided Practice

Use the distributive property to complete each multiplication problem.

1. $3 \times 14 = 3 \times ($ _____ + _____ $)$
 $= (3 \times$ _____ $) + (3 \times$ _____ $)$
 $=$ _____ + _____
 $=$ _____

2. $8 \times 59 = 8 \times ($ _____ − _____ $)$
 $= ($ _____ × _____ $) - (8 \times 1)$
 $= 480 -$ _____
 $=$ _____

3. $253 \times 4 = 4 \times ($ _____ + _____ $)$
 $= (4 \times$ _____ $) + (4 \times$ _____ $)$
 $=$ _____ + _____
 $=$ _____

4. $391 \times 2 = 2 \times ($ _____ − _____ $)$
 $= ($ _____ × 400 $) - (2 \times$ _____ $)$
 $=$ _____ − 18
 $=$ _____

5. $56 \times 8 =$ _____ × (_____ + _____)
 $=$ _____ + _____
 $=$ _____

6. $155 \times 3 =$ _____ × (_____ + _____)
 $=$ _____ + _____
 $=$ _____

7. $101 \times 5 =$ _____ × (_____ + _____)
 $=$ _____ + _____
 $=$ _____

8. $298 \times 4 =$ _____ × (_____ − _____)
 $=$ _____ − _____
 $=$ _____

SKILL 19: Practice

Find each product. Use mental math wherever possible.

1. $32 \times 9 =$ _____

2. $304 \times 8 =$ _____

3. $5 \times 801 =$ _____

4. $698 \times 3 =$ _____

5. $6 \times 703 =$ _____

6. $2 \times 599 =$ _____

7. $801 \times 9 =$ _____

8. $597 \times 7 =$ _____

9. $697 \times 3 =$ _____

10. $40 \times 89 =$ _____

11. $79 \times 12 =$ _____

12. $298 \times 11 =$ _____

13. $29 \times 4 =$ _____

14. $42 \times 8 =$ _____

15. $1,001 \times 8 =$ _____

16. $347 \times 28 =$ _____

Solve.

17. Bike helmets cost $39 each. How much would it cost to buy a helmet for each of the 400 students at the Roscoe Bike School?   _____

18. Claudia has 8 boxes of trading cards. There are 52 cards in each box. How many trading cards does Claudia have?   _____

TEST PREP

19. Which can be used to find the product: 6×498?

Skill 19

   A $(6 \times 500) + (6 \times 2)$
   B $(6 \times 500) - 2$
   C $(6 \times 500) - (6 \times 2)$
   D $500 - 2 \times 6$

20. Find the product: $30 \times 16 \times 20$.

Skill 18

   F 960   **H** 6,000
   G 5,460   **J** 9,600