

# Multiplying by Using the Commutative Property

In multiplication the order of the factors does not affect the answer.

Examples						
$\begin{array}{r} \underline{5 \times 8} \\ \downarrow \\ 5 \times 8 = 40 \end{array}$	=	$\begin{array}{r} \underline{8 \times 5} \\ \downarrow \\ 8 \times 5 = 40 \end{array}$	(or)	$\begin{array}{r} \underline{90 \times 60} \\ \downarrow \\ 90 \times 60 = 5,400 \end{array}$	=	$\begin{array}{r} \underline{60 \times 90} \\ \downarrow \\ 60 \times 90 = 5,400 \end{array}$

Remember,  $a \times b = b \times a$

**Directions:** Use the information above and on page 17 to solve these multiplication problems.

1.  $\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$

2.  $\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$

3.  $\begin{array}{r} 7 \\ \times 6 \\ \hline \end{array}$

4.  $\begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$

5.  $\begin{array}{r} 10 \\ \times 8 \\ \hline \end{array}$

6.  $\begin{array}{r} 8 \\ \times 10 \\ \hline \end{array}$

7.  $\begin{array}{r} 10 \\ \times 17 \\ \hline \end{array}$

8.  $\begin{array}{r} 17 \\ \times 10 \\ \hline \end{array}$

9.  $\begin{array}{r} 19 \\ \times 10 \\ \hline \end{array}$

10.  $\begin{array}{r} 10 \\ \times 19 \\ \hline \end{array}$

11.  $\begin{array}{r} 20 \\ \times 30 \\ \hline \end{array}$

12.  $\begin{array}{r} 30 \\ \times 20 \\ \hline \end{array}$

13.  $\begin{array}{r} 50 \\ \times 40 \\ \hline \end{array}$

14.  $\begin{array}{r} 40 \\ \times 50 \\ \hline \end{array}$

15.  $\begin{array}{r} 80 \\ \times 60 \\ \hline \end{array}$

16.  $\begin{array}{r} 60 \\ \times 80 \\ \hline \end{array}$

17.  $\begin{array}{r} 40 \\ \times 70 \\ \hline \end{array}$

18.  $\begin{array}{r} 70 \\ \times 40 \\ \hline \end{array}$

19.  $\begin{array}{r} 90 \\ \times 30 \\ \hline \end{array}$

20.  $\begin{array}{r} 30 \\ \times 90 \\ \hline \end{array}$

21.  $\begin{array}{r} 60 \\ \times 70 \\ \hline \end{array}$

22.  $\begin{array}{r} 70 \\ \times 60 \\ \hline \end{array}$

23.  $\begin{array}{r} 75 \\ \times 55 \\ \hline \end{array}$

24.  $\begin{array}{r} 55 \\ \times 75 \\ \hline \end{array}$

25.  $\begin{array}{r} 45 \\ \times 25 \\ \hline \end{array}$

26.  $\begin{array}{r} 25 \\ \times 45 \\ \hline \end{array}$

27.  $\begin{array}{r} 23 \\ \times 67 \\ \hline \end{array}$

28.  $\begin{array}{r} 67 \\ \times 23 \\ \hline \end{array}$

29.  $\begin{array}{r} 42 \\ \times 17 \\ \hline \end{array}$

30.  $\begin{array}{r} 17 \\ \times 42 \\ \hline \end{array}$

# •••••••••• Multiplying by Using the Associative Property

In multiplication the factors may be grouped in any order. The answer will be the same.

### Example

$$\underline{5 \times (6 \times 7)} = \underline{(5 \times 6) \times 7}$$

$$5 \times (6 \times 7) = 210 \quad (\text{or}) \quad (5 \times 6) \times 7 = 210$$

Remember,  $a \times (b \times c) = (a \times b) \times c$

**Directions:** Use the information above and on page 17 to help you solve these multiplication problems.

1.  $7 \times (8 \times 9) =$  \_\_\_\_\_

11.  $(90 \times 80) \times 25 =$  \_\_\_\_\_

2.  $(7 \times 8) \times 9 =$  \_\_\_\_\_

12.  $90 \times (80 \times 25) =$  \_\_\_\_\_

3.  $6 \times (5 \times 10) =$  \_\_\_\_\_

13.  $15 \times (25 \times 10) =$  \_\_\_\_\_

4.  $(6 \times 5) \times 10 =$  \_\_\_\_\_

14.  $(15 \times 25) \times 10 =$  \_\_\_\_\_

5.  $(12 \times 10) \times 5 =$  \_\_\_\_\_

15.  $(25 \times 41) \times 12 =$  \_\_\_\_\_

6.  $12 \times (10 \times 5) =$  \_\_\_\_\_

16.  $25 \times (41 \times 12) =$  \_\_\_\_\_

7.  $(10 \times 20) \times 30 =$  \_\_\_\_\_

17.  $(25 \times 15) \times (44 \times 23) =$  \_\_\_\_\_

8.  $10 \times (20 \times 30) =$  \_\_\_\_\_

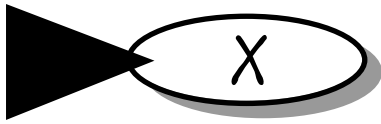
18.  $25 \times (15 \times 44) \times 23 =$  \_\_\_\_\_

9.  $20 \times (50 \times 80) =$  \_\_\_\_\_

19.  $(44 \times 14) \times (33 \times 13) =$  \_\_\_\_\_

10.  $(20 \times 50) \times 80 =$  \_\_\_\_\_

20.  $44 \times (14 \times 33) \times 13 =$  \_\_\_\_\_



..... **Answer Key**

**Page 6**

- 1. 168
- 2. 357
- 3. 88
- 4. 48
- 5. 384
- 6. 567
- 7. 336
- 8. 175
- 9. 520
- 10. 204
- 11. 392
- 12. 532
- 13. 266
- 14. 699
- 15. 1,869

**Page 7**

- 1. 350
- 2. 650
- 3. 380
- 4. 940
- 5. 990
- 6. 770
- 7. 520
- 8. 420
- 9. 34,600
- 10. 55,900
- 11. 28,300
- 12. 93,400
- 13. 5,900
- 14. 7,600
- 15. 72,000
- 16. 86,000
- 17. 329,000
- 18. 348,000
- 19. 453,000
- 20. 987,000

**Page 8**

- 1. 3,200
- 2. 4,500
- 3. 1,800
- 4. 3,600
- 5. 2,100
- 6. 4,000
- 7. 2,700
- 8. 4,500
- 9. 4,200
- 10. 3,000
- 11. 4,800
- 12. 1,500
- 13. 4,000
- 14. 7,200
- 15. 3,500
- 16. 2,800
- 17. 2,400
- 18. 6,300
- 19. 1,800
- 20. 1,200

**Page 10**

- 1. 1,023
- 2. 504
- 3. 1,696
- 4. 168
- 5. 1,219
- 6. 1,953
- 7. 966
- 8. 943
- 9. 3,300
- 10. 1,305
- 11. 2,805
- 12. 2,673
- 13. 2,516
- 14. 1,755
- 15. 4,816
- 16. 2,072
- 17. 2,444
- 18. 3,219
- 19. 5,742
- 20. 2,548

**Page 11**

- 1. 4,410
- 2. 1,296
- 3. 4,012
- 4. 3,724
- 5. 6,536
- 6. 5,586

- 7. 1,885
- 8. 4,158
- 9. 4,425
- 10. 2,310
- 11. 840
- 12. 7,227
- 13. 4,312
- 14. 6,417
- 15. 6,048
- 16. 6,528

**Page 12**

- 1. 18,759
- 2. 35,322
- 3. 53,656
- 4. 2,700
- 5. 27,315
- 6. 11,856
- 7. 10,486
- 8. 38,684
- 9. 53,504
- 10. 69,894
- 11. 22,275
- 12. 26,862
- 13. 18,018
- 14. 18,785
- 15. 53,754
- 16. 25,806

**Page 14**

- 1. 189,600
- 2. 174,600
- 3. 131,600
- 4. 253,500
- 5. 334,000
- 6. 553,800
- 7. 50,400
- 8. 128,600
- 9. 662,200
- 10. 655,200
- 11. 503,200
- 12. 587,300
- 13. 262,800
- 14. 665,100
- 15. 578,200

**Page 15**

- 1. 55,836
- 2. 114,264
- 3. 96,822
- 4. 152,193
- 5. 174,484
- 6. 54,880
- 7. 202,198
- 8. 321,142
- 9. 463,182
- 10. 662,337
- 11. 258,804
- 12. 71,188

**Page 16**

- 1. 852,852
- 2. 137,731
- 3. 260,275
- 4. 335,070
- 5. 484,700
- 6. 182,988
- 7. 331,996
- 8. 321,255
- 9. 1,248,156
- 10. 2,034,655
- 11. 1,057,375
- 12. 6,435,156

**Page 18**

- 1. 4
- 2. 9
- 3. 25
- 4. 35
- 5. 22
- 6. 89
- 7. 304
- 8. 978
- 9. 432
- 10. 634
- 11. 897
- 12. 5,673
- 13. 0
- 14. 0
- 15. 0
- 16. 0
- 17. 0
- 18. 0
- 19. 0
- 20. 0
- 21. 0
- 22. 0
- 23. 4,020
- 24. 0
- 25. 0
- 26. 6,020
- 27. 0
- 28. 0
- 29. 8,659
- 30. 0

**Page 19**

- 1. 72
- 2. 72
- 3. 42
- 4. 42
- 5. 80
- 6. 80
- 7. 170
- 8. 170
- 9. 190
- 10. 190
- 11. 600
- 12. 600
- 13. 2,000
- 14. 2,000
- 15. 4,800
- 16. 4,800
- 17. 2,800
- 18. 2,800
- 19. 2,700
- 20. 2,700
- 21. 4,200
- 22. 4,200
- 23. 4,125
- 24. 4,125
- 25. 1,125
- 26. 1,125
- 27. 1,541
- 28. 1,541
- 29. 714
- 30. 714

**Page 20**

- 1. 504
- 2. 504
- 3. 300
- 4. 300
- 5. 600
- 6. 600
- 7. 6,000
- 8. 6,000

- 9. 80,000
- 10. 80,000
- 11. 180,000
- 12. 180,000
- 13. 3,750
- 14. 3,750
- 15. 12,300
- 16. 12,300
- 17. 379,500
- 18. 379,500
- 19. 264,264
- 20. 264,264

**Page 22**

- 1. 18,000,000
- 2. 24,000,000
- 3. 8,000,000
- 4. 14,000,000
- 5. 24,000,000
- 6. 16,000,000
- 7. 6,000,000
- 8. 21,000,000
- 9. 30,000,000
- 10. 12,000,000
- 11. 20,000,000
- 12. 42,000,000
- 13. 81,000,000
- 14. 49,000,000
- 15. 36,000,000
- 16. 16,000,000
- 17. 25,000,000
- 18. 64,000,000
- 19. 9,000,000
- 20. 4,000,000

**Page 23**

- 1. 72,000,000,000,000
- 2. 42,000,000,000,000
- 3. 56,000,000,000,000
- 4. 18,000,000,000,000
- 5. 24,000,000,000,000
- 6. 45,000,000,000,000
- 7. 36,000,000,000,000  
36 trillion
- 8. 45,000,000,000,000  
45 trillion
- 9. 48,000,000,000  
48 billion
- 10. 3,000,000,000,000,000  
3 quadrillion
- 11. 28,000,000,000,000,000  
28 quadrillion
- 12. 54,000,000,000,000,000  
54 quadrillion

**Page 24**

- 1. 4,972,000
- 2. 19,648,000
- 3. 42,280,000
- 4. 20,616,000
- 5. 22,908,000
- 6. 4,488,000
- 7. 11,136,000
- 8. 18,786,000
- 9. 69,683,286 Est. 72,000,000
- 10. 43,082,832 Est. 40,000,000
- 11. 11,018,992 Est. 10,000,000
- 12. 33,151,257 Est. 32,000,000
- 13. 17,880,030 Est. 20,000,000
- 14. 79,108,242 Est. 80,000,000
- 15. 34,130,910 Est. 36,000,000
- 16. 55,406,844 Est. 54,000,000