

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

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

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

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. $44 \times (14 \times 33) \times 13 =$ _____