MATH

Parentheses, brackets and braces

Name _____ Date _____

I can solve expressions with brackets and braces, from the inside out.

1 How it works

Brackets [ ] and braces { } are bigger grouping symbols. They hold parentheses inside them, like boxes inside boxes. Always start with the innermost group and work outward. In 2 × [3 + (8 − 2)], do 8 − 2 = 6, then 3 + 6 = 9, then 2 × 9 = 18.

$$2 \times [3 + (8 - 2)]$$
$$= 2 \times [3 + 6]$$
$$= 2 \times 9$$
$$= 18$$

2 Solve

Inside the brackets first.

1. $[5 + (4 \times 5)] - 9 =$ ☐
2. $[7 + (7 \times 4)] - 7 =$ ☐
3. $8 \times \{9 + [3 - (6 - 6)]\} =$ ☐
4. $6 + [(8 + 9) \times 5] =$ ☐
5. $5 + [(2 + 6) \times 5] =$ ☐
6. $\{[7 + 6] \times 6\} - 3 =$ ☐
7. $\{[5 + 3] \times 3\} - 2 =$ ☐
8. $2 \times \{2 + [5 - (5 - 5)]\} =$ ☐
9. $4 + [(2 + 5) \times 4] =$ ☐
10. $3 \times \{4 + [7 - (5 - 2)]\} =$ ☐

How did I do? ☆ ☆ ☆

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Show each step

Name _____ Date _____

I can show the steps in order.

1 Write one step on each line

One operation at a time.

1. $\{[8 + 2] \times 5\} - 7$

= _____

= _____

= _____

2. $\{[4 + 2] \times 9\} - 5$

= _____

= _____

= _____

3. $[5 + (5 \times 6)] - 8$

= _____

= _____

= _____

4. $[2 + (6 \times 3)] - 5$

= _____

= _____

= _____

2 Solve

1. $3 + [(6 + 9) \times 6] =$ ☐

2. $[(8 + 3) \times 9] \div 3 =$ ☐

3. $5 + [(9 + 3) \times 6] =$ ☐

4. $9 \times \{3 + [5 - (5 - 2)]\} =$ ☐

5. $[6 + (3 \times 6)] - 8 =$ ☐

6. $\{[8 + 7] \times 3\} - 5 =$ ☐

How did I do? ☆ ☆ ☆

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True or false?

Name _____ Date _____

I can check work and find mistakes.

1 Is it true? Circle true or false.

1. $3 \times \{5 + [8 - (5 - 4)]\} = 36$ — true / false
2. $9 \times \{3 + [8 - (5 - 5)]\} = 25$ — true / false
3. $7 + [(6 + 6) \times 9] = 171$ — true / false
4. $2 + [(6 + 5) \times 4] = 52$ — true / false
5. $3 + [(7 + 5) \times 4] = 51$ — true / false
6. $9 + [(8 + 9) \times 3] = 60$ — true / false

2 Find the mistake

They did not follow the order. Fix it.

Leo says $[3 + (7 \times 8)] - 5 = 75$.

The right answer is ____ What went wrong? _____

Noor says $[9 + (7 \times 5)] - 4 = 76$.

The right answer is ____ What went wrong? _____

3 Think about it

1. Which do you work out first in $2 \times [5 + (6 - 4)]$?
2. What is $\{2 \times [3 + 1]\} + 5$?
3. Why do we use [ ] around ( )?

How did I do? ☆ ☆ ☆

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Word problems

Name _____ Date _____

I can write one expression for a problem and solve it.

1 Read, write an expression, solve

Show your expression in the box.

1 Leo has 4 bags with 6 cookies in each bag and 5 loose cookies. Write an expression and find how many cookies in all.

Answer:

2 Hana buys 3 apples at 40 cents each and pays with $2 (200 cents). How much change? Write an expression first.

Answer:

3 A class has 2 boxes of 12 pencils and 6 more pencils. The pencils are shared by 5 tables. How many does each table get?

Answer:

4 Leo says 10 − 4 + 2 = 4, because you add first. Is Leo right?

Answer:

How did I do? ☆ ☆ ☆

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FOR TEACHERS AND PARENTS

Answer key: parentheses, brackets and braces

1 Page 1

Solve: 1) 16; 2) 28; 3) 96; 4) 91; 5) 45; 6) 75; 7) 22; 8) 14; 9) 32; 10) 24.

2 Page 2

1) {[8 + 2] × 5} − 7 = {10 × 5} − 7 = 50 − 7 = 43
2) {[4 + 2] × 9} − 5 = {6 × 9} − 5 = 54 − 5 = 49
3) [5 + (5 × 6)] − 8 = [5 + 30] − 8 = 35 − 8 = 27
4) [2 + (6 × 3)] − 5 = [2 + 18] − 5 = 20 − 5 = 15
Solve: 1) 93; 2) 33; 3) 77; 4) 45; 5) 16; 6) 40.

3 Page 3

True or false: 1) true; 2) false; 3) false; 4) false; 5) true; 6) true.
Mistake 1) [3 + (7 × 8)] − 5 = 54 ([3 + (7 × 8)] − 5 = [3 + 56] − 5 = 59 − 5 = 54)
Mistake 2) [9 + (7 × 5)] − 4 = 40 ([9 + (7 × 5)] − 4 = [9 + 35] − 4 = 44 − 4 = 40)
Think: 1) The parentheses: 6 − 4; 2) 13; 3) So it is easy to see which group goes inside which.

4 Page 4: word problems

1) 4 × 6 + 5 = 29 cookies
2) 200 − 3 × 40 = 80 cents
3) (2 × 12 + 6) ÷ 5 = 6 pencils
4) No. Add and subtract from left to right: 10 − 4 + 2 = 8.

5 Teaching tip

Give children three colored pencils. They trace the parentheses in one color, the brackets in another and the braces in a third, then solve the colors in order from the inside out.

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