* 1. How can we simplify 2x (3x2 + 4x5)?

2x × 3x2 + 2x × 4x5

6x3 + 8x6

* 1. Write $2x×\frac{(5y-y)}{2}$ in a simplified form.

$$2x×\frac{4y}{2}$$

$$2x×2y$$

$$4xy$$

* 1. Evaluate the algebraic expression for the given value x = 10.

 5(x + 2) ÷ 2x – 14.

5 (10 + 2) ÷ 20 – 14

5 (12) ÷ 20 – 14

60 ÷ 20 – 14

3 – 14

– 11

* 1. The Pentagon building in Washington, D.C., is shaped like a regular pentagon. If the length of one side of the Pentagon is represented by n + 2, find the perimeter?

Perimeter = 5×(n + 2)

Perimeter = 5n + 10

**Problem 1**

$$\frac{(2^{2}-2) }{√2}$$

$$=\frac{2}{√2}$$

$$=\frac{(4-2) }{√2}$$

First we evaluate the expression inside the parentheses by evaluating the powers and do the subtraction.

Simplify

We then remove the parentheses and multiply both the denominator and the numerator by √2.

$$=√2$$

$$=\frac{2√2}{2}$$

As a last step we do all multiplications and division from left to right.

$$=\frac{2√2}{√2√2}$$

**PROBLEM 2**

We apply the distributive law.

We multiply x3 by x4, and multiply x3  by 5x2 .

x3 × x4  + x3  × 5x2

Then we apply the power rule of the exponents

x3+4  + 5x3+2

x7 + 5x 5

Simplify *x*3(*x*4 + 5*x2*)

$$2x\frac{(2x) }{2}$$

First, we evaluate the expression inside the parentheses by doing the subtraction then doing the division.

Simplify

$$2x\frac{(6x-4x) }{2}$$

**PROBLEM 3**

$2x$ ($x$)

$2(x$1+1)

$2(x$2)

$2(x.x$)

Then we apply the commutative rule

Then we do the multiplication using the power rule from the exponent rules.