## 1. Geometry

Given that $\overline{A B} \perp \overline{C D}$



How to construct a triangle with sides equal to three line segments:


## System of equations



1. In a zoo there are birds (they have 2 legs each) and mammals with 4 legs each. How many birds and mammals are in the zoo, if they have 6000 legs and 2500 heads altogether? (use substitution)
2. A swimming pool can be filled by one pipe in 10 hours or by another pipe in 15 hours. How long it will take to fill up the pool with both pipes opened?
3. A swimming pool can be filled with one pipe in 10 hours. When full, the pool can be drained out with another pipe in 20 hours. How long it will take to fill up the pool if the drain pipe is open?
4. Five hamsters will eat 5 bags of hamster food in 5 days. How many days will it take for 10 hamsters to eat 10 bags of the food?

## 5. Compute using the distributive property, factoring out the common factor:

a) $6 \cdot 65+6 \cdot 35=$
b) $356 \cdot 73+644 \cdot 73=$
c) $\frac{1}{2} \cdot 387+\frac{1}{2} \cdot 613=$
6. Factorize the following expressions:
a) $\frac{1}{3} a-\frac{1}{3} b=$
b) $10+15=$
c) $5 a-3 a=$

## ORDER OF OPERATIONS!!!!!!!

| P | E | M | D | A | S |
| :---: | :---: | :---: | :---: | :---: | :---: |
| (....) | $a^{2}$ | X | $\div$ | + |  |

8. Using the distributive property rewrite the following expressions without parenthesis:
$5 x(3+y)=$
$2 \cdot(2+x)=$
$\left(\frac{1}{2}-a\right) \cdot 2=$
$(a+c) \cdot 3=$
$x(5 a+b)=$
