Problems marked with * are more difficult.

1. Compute:
a. $(-3)^{3}$;
b. $-3^{3}$;
c. $(-3)^{4}$
d. $-3^{3}$
e. $-2^{7}$;
f. $(-2)^{7}$;
g. $(2 \cdot 3)^{3}$;
h. $2 \cdot 3^{3}$;
i. $\left(\frac{1}{3}\right)^{2}$;
j. $\frac{1}{3^{2}}$;
k. $3^{-2}$;
2. $(-3)^{-2}$;
m. $(-5 \cdot 2)^{3}$

Remember, that $a^{n}: a^{m}=a^{n-m}=a^{n+(-m)}=a^{n} \cdot \frac{1}{a^{m}}=a^{n} \cdot a^{-m}$
2. Prove that values of the following expressions do not depend from the value of variables. Find these values. Hint: simplify these expresstions.
а) $\frac{4^{m}+4^{m}+4^{m}+4^{m}}{4^{m}: 4^{2}}$;
b) $\frac{\overbrace{10^{n}+10^{n}+\ldots+10^{n}}^{10 \text { раз }}}{10^{n}: 10}$;
C) $\frac{\overbrace{99^{k}+99^{k}+\ldots+99^{k}}^{99^{k+2}: 99}}{9 \text { раз }}$.
3. a. Prove, that in isosceles triangle medians conducted to the equal sides are equal.
b. ${ }^{* *}$ (This problem is much more difficult than the problem a. Just write any idea you can come up with).

Prove, that if two medians in a triangle are equal, this triangle is an isosceles triangle.
Be careful about what you know and what you want to prove in each case.
Hint: look for congruent (equal) triangles.

What about altitudes? Can you formulate similar statement about altitudes?
Hint: look for congruent (equal) triangles.
4. Draw a triangle with sides $5 \mathrm{~cm}, 7 \mathrm{~cm}$, and 7 cm (use ruler and compass). Mark the midpoints of equal sides (use ruler), draw medians to the equal sides. Measure these two medians. Are they equal?
5. Draw the triangle with sides $6 \mathrm{~cm}, 8 \mathrm{~cm}$, and 8 cm (use ruler and compass). Draw all two altitudes (use ruler and anything which has a right angle) to the equal side. Measure them. Are they equal?

