1. Using the order of operations

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|    | Evaluate 150 **÷** (6 + 3 x 8) - 5 using the order of operations. |
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1. Understanding exponents (Powers or Indices)

Calculate the following without using a calculator and express it in µs.

$\frac{1}{2×10^{5}} $s

1. Calculate the following without using a calculator and express it in kHz (Powers or Indices)

$\frac{1}{2×10^{-5}}$ Hz

1. (Ratio and Proportion) How do you understand the expression: [directly proportional and inversely proportional](http://www.mathsisfun.com/algebra/directly-inversely-proportional.html) on the basis of Coulomb’s law?

$$F=k\frac{Q\_{1}×Q\_{2}}{r^{2}}$$

1. What is the definition of cross multiply? Give an example.

{\displaystyle ad=bc\qquad \mathrm {or} \qquad a={\frac {bc}{d}}.}

1. What is a linear equation? How do you graph a linear equation by making a table?
2. Introduction to Trigonometry
3. What are sine function?
4. Why exactly is trigonometry useful in the real world?
5. Converting fractions, decimals, and percent
6. Convert a fraction into a decimal (some simple task). What is 5/8 as a decimal manually
7. Convert a decimal into a fraction (some simple task). Express 0,75 as a fraction manually
8. Convert a percent into a decimal (some simple task). Convert 8,5% to decimal manually
9. Convert a decimal into a percent (some simple task). Convert 0,35 to percent manually
10. Converting units
* Lengths and distances
* Area
* Density
* Pressure
* Velocity and speed
* Volume and capacity

Convert without a calculator (manually) and explain how

20 m/s into km/h

1. Metric Numbers – Give examples of Metric prefix
2. Give and explain the Newton's law of universal gravitation
3. Explain what is Quantum Physics?
4. What are the properties of fourth matter Plasma?
5. Define Kinetic energy and potential energy
6. What is the difference between Pressure in Solids and in Liquids?
7. (Oscillations and waves) What is a standing wave?
8. Explain what is Wave-Particle duality?
9. Explain what is Pascal law?
10. Mention the factors on which the velocity of sound depends?
11. Define term “Convection”?