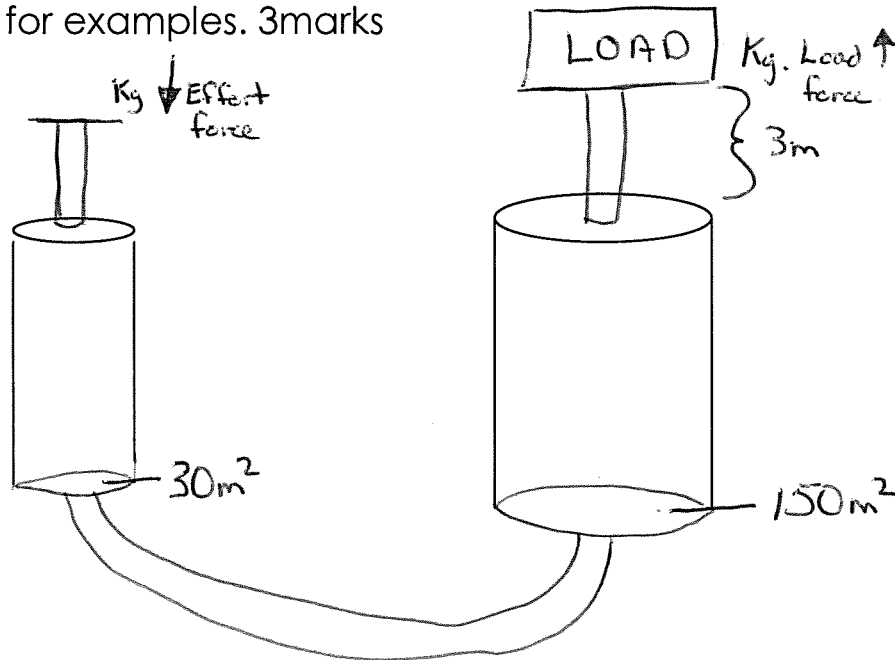


Science 8  
Unit 4 topic 5  
Hydraulics and Pneumatics

Name:

Date:

1.) The pressure in this system is  $7\text{N/m}^2$ . Determine the how many kilograms the large piston can lift. Show all work. Refer to page 309 for examples. 3marks



2.) Referring to the diagram in question one. What is the mechanical advantage of that system? Show all work. 3 marks

3.) How far will the small have to move to make the large piston move 3 metres? Show calculations 2 marks

4.) Define the following terms:

a.) Hydraulics systems:

b.) Pneumatic systems:

c.) Value:

d.) pumps:

5.) Describe one important difference between the use of gases in a pneumatic system and the use of liquids in hydraulic systems. 1 marks

6.) What two characteristics of liquids do hydraulic systems depend upon? 1 mark

7.) (Think) Why would gases not work effectively in hydraulic systems? 1 mark

8.) Give three example of pneumatics from the textbook . 1 mark

9.) Describe how a hover craft uses pneumatics to work. 2 marks

10.) Large hydraulic equipment does not have two pistons connected as we have seen. How do their hydraulic systems function? 1 mark page 320

11.) What are the three different hydraulic systems on an A340 Airbus, and why do they have three hydraulic systems? 2 marks

12.) Give an example of a pneumatic and a hydraulic system in the body. 2 marks

13.) What moves blood in the veins? What keeps the blood from flowing backwards in the veins? 2 marks.

14.) Label the four parts of this heart. 2 marks

