Q1: the length , L cm of a simple pendulum is directly proportional to the square of its time , T sec . A pendulum with a length of 220.5 cm has a period of 3s

1. Find an equation connecting L and T
2. Find the length of pendulum which has a period of 5s
3. Draw the graph of l and T

Q2: given that y is directly proportional to X^2 . copy and complete the table

X	9	6		3	
Y			290	60	204

Q3 if w is inversely proportional to v^3 and w=45 when v=9

1. Find the value of w when v=8
2. Find equation
3. Calculate the value of v when w=62

Q4: when the object is falling , the air resistance varies as the square of the speed . At a certain speed, the resistance is 30 newtons what is the resistance at twice this speed ?

a) Y is inversely proportional to x
b) Given that y=6 when x=4, find the value of y when x=3.

Q5 simplify the following

1. p/2q **X** 4pq/t
2. 3/m+4 - 4/m
3. $2x^2$+x-15/ax+3a-2bx-6b
4. 8px+4py-6x-3y
5. X^2-25/x^2-2x-35

Q6: make y the subject of the formula

$H^2=x^2+y^2$

Q7: simplify x^3+5x^2/x^2-25 , giving your answer in a single fraction

Q8: $s= ut + 1at^2/2$ find the value of s when u=5.2, t=7 and a=1.6

Q9: simplify the following

1. $(ab^2)^3 \times (2a^2b)^3$
2. $16g^8h^7 / (-2g^3h^2)^3$
3. $(g^2/h^3)^6 / (-3g^5/2h^2)^3$
4. $(a_{-2}b_3)_{1/3} \times (a_4b_{-5})_{1/2}$
5. $e_{-1/3}f_{-1/4} / (e_2f_{=1/3})_{-2}$

6. $(3c)^0 / (-4 g^3 h^{-2})^2$

Q10: solve each of the following equations

1. $9^c=243$
2. $11^a=1331$
3. $2^b=1/128$