Class-9

Work sheet of algebraic ratio and proportion

Short question :

1. What is the fourth proportion of 5, 10, 8 ?
2. If the ratio of two numbers is 7:5, then what will be the ratio of their squared?
3. What is the ratio of a square and another one on its diagonal?
4. If the ratio of a square and another one on its diagonal?
5. If the ratio of two numbers is 3:4 and their sum is 42, what is the greater number?
6. If 5:7::X: 14, what is the value of X?
7. In the sugarcane juice the ratio of sugar and water is 3:7,what is the amount of sugar in it?
8. An article is sold at the loss of 10%, what is the ratio of selling and buying price?
9. The ratio of flour and husk in wheat to 3:2,what is the percentage of flour in it?
10. In the ΔABC ,∠A:∠B=1:2 and ∠B:∠C=2:3,what is the measurement of ∠C ?

Creative part

1. If a : b=b : c

a) Show that,$\frac{a}{c} = \frac{a^2+b^2}{b^2+c^2}$

b) Prove that,$a^2b^2c^2\left(\frac{1}{a^3} + \frac{1}{b^3} + \frac{1}{c^3}\right) = a^3 + b^3 + c^3$

c) Show that, a-2b+c= $\frac{(a-b)^2}{a} = \frac{(b-c)^2}{c}$

2. P.q,r are ordered proportional

a) Show that, $\left(\frac{p+q}{q+r}\right)2 = \frac{p}{q}$

b) Prove that, $p^2q^2r^2\left(\frac{1}{p^3} + \frac{1}{q^3} + \frac{1}{r3}\right) = p^3 + q^3 + r^3$

c) show that,$\frac{p^2+q^2}{q^2+r^2} = \frac{(p+q)^2}{(q+r)}$ satisfies the condition of the stem.