Review

September-26-13
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used 2009-2

1. Andrij claims that the following statement is true:
$x^3 - y^3 = (x - y)(x^2 + y^2)$
Is he correct? Justify your answer.

2. Simplify and state any restrictions on the variables.

a. $\frac{x^2-9x+20}{16-x^2}$

b. $\frac{2x^2-xy-y^2}{x^2-2xy+y^2}$

c. $\frac{2}{y+1}+\frac{3}{y-2}$

d. $\frac{5}{x^2}-\frac{3}{4x^3}$

e) $\frac{x^2-y^2}{4x^2-y^2} \times \frac{4x^2+8xy+3y^2}{x+y} \div \frac{2x+3y}{2x-y}$

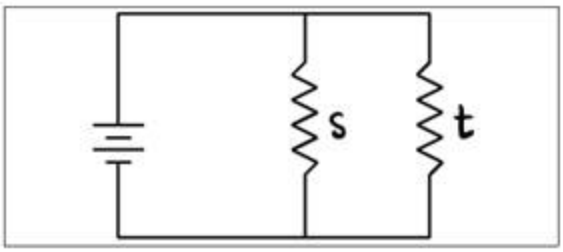
f) $\frac{7}{3n^2+24n}-\frac{7}{2n}$

g) $\frac{7x}{x^2+x-12}-\frac{2x}{x^2+9x+20}$

h) $\frac{8}{7v-6}+\frac{4}{3v^2}$

3. Determine the area of the triangle in simplified form if the height of the triangle is $\frac{5x-35}{x+3}$, and the base of the triangle is $\frac{4x^2}{x^2-16x+63}$.

4. When two resistors, s and t, are connected in parallel, their combined resistance, R, is given by
$\frac{1}{R}=\frac{1}{s}+\frac{1}{t}$
If s is increased by 1 unit and t is decreased by 1 unit, what is the change in R?



5. An isosceles triangle has two sides of length $9x + 3$. The perimeter of the triangle is $30x + 10$. Suppose base is the missing side.

a. Determine the ratio of the base to the perimeter, in simplified form. State the restriction on x.

b. Explain why the restriction on x in part a. is necessary in this situation.