Name _____ M$5 Review 17 Oct 2006

1. Solve:

$$\frac{1}{2b+6} + \frac{1}{2b-6} = \frac{4}{b^2-9}$$

2. Solve:

$$\frac{2y+1}{3y-18} - \frac{5}{y-6} = \frac{1}{3}$$

3. Combine and simplify:

$$\frac{2}{2y-1} - \frac{1}{2y+1} - \frac{2}{4y^2-1}$$

4. Combine and simplify:

$$\frac{7}{y^2-49} - \frac{6}{y^2-2y-35}$$

5. Solve for x in simplest radical form:

$$x^2 = 6x + 31$$

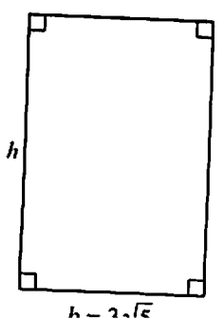
6. Combine and simplify

$$\frac{9}{x^2+7x+10} + \frac{3}{x+5} - \frac{1}{x+2}$$

7. Rationalize the denominator and simplify the result.

$$\frac{\sqrt{12}-2}{\sqrt{3}-1}$$

8. In a rectangle, if the area $A = 12\sqrt{30}$ and the base $b = 3\sqrt{5}$, find the measure of the height h.



9. Simplify

$$\frac{3d^2 - 9d + 6}{2d^2 - 10d + 12} \cdot \frac{6 - 2d}{3 - 3d}$$

10. Simplify:

$$\frac{25 - 16y^2}{6y^3 - 36y^2} \cdot \frac{10y + 8y^2}{10 - 3y - 4y^2}$$

11. Simplify:

$$\frac{\sqrt{20ab^5}}{2\sqrt{5ab^3}}$$

12.

Challenge

What is wrong with this "proof" that $2 = 1$?

$$\begin{aligned} r &= s \\ r^2 &= rs \\ r^2 - s^2 &= rs - s^2 \\ (r + s)(r - s) &= s(r - s) \\ r + s &= s \\ s + s &= s \\ 2s &= s \\ 2 &= 1 \end{aligned}$$