Math 1441 Worksheet 0

1. Simply the fraction.

$$(a) \ \frac{1}{2} - \frac{1}{3} \qquad\qquad (b) \ \frac{2}{5} \cdot \frac{3}{4} \qquad\qquad (c) \ \frac{\frac{5}{4}}{\frac{3}{2}}$$

2. Expand and simplify.
$$(x+3)(4x-5)$$

3. Factor the expression.
$$4x^2 - 25$$

4. Simplify the rational expression.
$$\frac{x^2 + 3x + 2}{x^2 - x - 2}$$

5. Solve the equation.
$$x^2 - x - 12 = 0$$

6. Sketch the graph of the function.
$$y = x^2 - 1$$

7. Find the domain of the function.
$$\sqrt{1 - x}$$

8. If $f(x) = 2x - 3$ and $g(x) = x^2 + 2x - 1$, find the composition.
$$f(g(x))$$

Answers:

(1) (a) $\frac{1}{6}$ (b) $\frac{3}{10}$ (c) $\frac{5}{6}$

(2) $4x^2 + 7x - 15$

(3) $(2x - 5)(2x + 5)$

(4) $\frac{x+2}{x-2}$

(5) $-3, 4$

(7) $(-\infty, 1]$

(8) $2x^2 + 4x - 5$