Ex. 1A p. 27-28
From: REDMT.

SIMPLIFYING RATIONAL EXPRESSIONS WORKSHEET

2. State the restrictions on the variables in each of the following.

(a) $\frac{5}{x}$ (b) $\frac{6}{x-4}$ (c) $\frac{x}{m-2}$

(d) $\frac{8}{t+3}$ (e) $\frac{1}{(x-1)(x+3)}$ (f) $\frac{x}{(x+2)(x+7)}$

(g) $\frac{r-4}{r+5}$ (h) $\frac{m+2}{m(m+8)}$ (i) $\frac{3x}{2x-1}$

(j) $\frac{16}{x-m}$ (k) $\frac{x-4}{(2x+1)(3x-2)}$ (l) $\frac{3x^2}{(1-x)(3-x)}$

3. Simplify, where possible, the following rational expressions.

(a) $\frac{12}{30}$ (b) $\frac{24x}{10}$ (c) $\frac{tx}{ty}$

(d) $\frac{-6rst}{3rs}$ (e) $\frac{4m}{3n}$ (f) $\frac{20xy}{10x}$

(g) $\frac{mx}{ny}$ (h) $\frac{-15xy}{-3w}$ (i) $\frac{16x^5}{4x^3}$

(j) $\frac{-21x^2y^4z}{3x^4y^2}$ (k) $\frac{x^5}{x^{10}}$ (l) $\frac{r^4s^6t^7}{xy}$

(m) $\frac{2xy}{8x^4y^3}$ (n) $\frac{-2m^3n}{6m^2n^7}$ (o) $\frac{15x^3y^4}{-3x^5y^4}$

(p) $\frac{(x+2)(x+5)}{(x+5)(x-2)}$ (q) $\frac{(m-3)^2}{(m-3)(m+3)}$ (r) $\frac{2(t-3)(t+2)}{3(t+2)(t-3)}$

4. Simplify, where possible, and state any restrictions on the variables.

(a) $\frac{x^2-3x-28}{x^2-4x-21}$ (b) $\frac{x^2+7x}{x^2+14x+49}$

(c) $\frac{2t-4}{t^2-3t+2}$ (d) $\frac{2m+6}{m^2-4}$

(e) $\frac{6x+6y}{3x-3y}$ (f) $\frac{2x-10}{x^2+2x-35}$

(g) $\frac{x^2-49}{x^2+6x-7}$ (h) $\frac{x^2-5x+6}{x^2-5x-6}$

(i) $\frac{x^2-4}{2-x}$ (j) $\frac{x-4}{4-x}$

(k) $\frac{2m^2-2}{m^2+2m+1}$ (l) $\frac{x^2+3x-28}{12+x-x^2}$

(m) $\frac{3-3x}{x^2+3x-4}$ (n) $\frac{x^2-y^2}{x^2-2xy+y^2}$

(o) $\frac{5m}{5m+5n}$

5. Simplify, where possible, and state restrictions on the variables.

(a) $\frac{2x^2+3x-2}{x^2-4}$ (b) $\frac{6x^2+11x+3}{6x^2-7x-3}$ (c) $\frac{x^2-y^2}{y-x}$

(d) $\frac{x^2-5x}{x^2-x-20}$ (e) $\frac{2m^2+7m+3}{2m^2+5m+3}$ (f) $\frac{12-5m-2m^2}{2m^2-7m+6}$

(g) $\frac{6m^2-54}{2m^2+7m+3}$ (h) $\frac{x^3-8}{3x^2-x-10}$ (i) $\frac{-xm-ym}{x^2+2xy+y^2}$

(j) $\frac{3x+6}{x^4-16}$ (k) $\frac{4(x^2-y^2)}{(x-y)^2}$ (l) $\frac{6x^2+21x-12}{9x^2-3x-30}$

6. Simplify the following.

(a) $\frac{x^2-4}{x^3+4x^2-4x-16}$ (b) $\frac{x^3-7x-6}{x^2-2x-3}$

(c) $\frac{3x+4(x-2)}{4x+5(x-2)}$ (d) $\frac{(x-2)(x+3)+(x-2)}{(x-2)(x+3)(x-4)}$

(e) $\frac{1-(10-x^2)}{2x^2+9x+9}$ (f) $\frac{x^3+8}{3x^2-6x+12}$

(g) $\frac{x^2-y^2}{x^3+y^3}$ (h) $\frac{4-x^2}{2x^3-x^2-8x+4}$

(i) $\frac{2(x-3)-3(x-4)}{2x^2-6x-36}$ (j) $\frac{15x^2+14xy-8y^2}{6x^2+5xy-4y^2}$