Practice Exercises

Perform the indicated operation.

1. $\dfrac{3}{x+1}+\dfrac{4}{x}$

2. $\dfrac{x+8}{x^2-4x+4}+\dfrac{3x-2}{x^2-4}$

3. $\dfrac{2x}{x^2-9}-\dfrac{3}{x-3}$

4. $\dfrac{3}{x^2-x-2}-\dfrac{2}{x^2-5x+6}$

5. $\dfrac{x+2}{x}-\dfrac{x+2}{2}$

Problem Set

Perform the indicated operation.

1. $\dfrac{a}{a-b} - \dfrac{b}{a+b}$
2. $\dfrac{3}{2x+1} + \dfrac{5}{3x-2}$
3. $\dfrac{3a+12}{2a-8} + \dfrac{a+4}{a-4}$
4. $\dfrac{y+1}{y} + \dfrac{y-1}{y+1}$
5. $\dfrac{2x}{x^2-4x+4} - \dfrac{1}{x-2}$

Problem Set

1. $$\frac{a(a+b)-b(a-b)}{(a-b)(a+b)}$$
$$= \frac{a^2+ab-ab+b^2}{(a-b)(a+b)}$$
$$= \frac{a^2+b^2}{(a-b)(a+b)}$$

2. $$\frac{3(3x-2)+5(2x+1)}{(2x+1)(3x-2)}$$
$$= \frac{9x-6+10x+5}{(2x+1)(3x-2)}$$
$$= \frac{19x-1}{(2x+1)(3x-2)}$$

3. $$\frac{3a+12+2(a+4)}{2(a-4)}$$
$$= \frac{3a+12+2a+8}{2(a-4)}$$
$$= \frac{5a+20}{2(a-4)}$$
$$= \frac{5(a+4)}{2(a-4)}$$

4. $$\frac{(y+1)(y+1)+y(y-1)}{y(y+1)}$$
$$= \frac{y^2+2y+1+y^2-y}{y(y+1)}$$

$$= \frac{2y^2+y+1}{y(y+1)}$$

5. $$\frac{2x-(x+2)}{(x-2)(x-2)}$$

$$= \frac{2x-x-2}{(x-2)(x-2)}$$

$$= \frac{x+2}{(x-2)^2}$$