7 පිළිතුරු

11 ශ්‍රේණිය

වීජීය භාග

පුනරීක්ෂණ අභ්‍යාසය

සුළු කරන්න.

a. $\frac{a}{5}+\frac{2a}{5}$ **b.** $\frac{8}{x}-\frac{3}{x}$ **c.** $\frac{7}{3m}+\frac{3}{4m}-\frac{8}{m}$

d. $\frac{9}{x+2}+\frac{1}{x}$ **e.** $\frac{1}{m+2}-\frac{2}{m+3}$ **f.** $\frac{a+3}{a^2-4}+\frac{1}{a+2}$

g. $\frac{2}{x^2-x-2}-\frac{1}{x^2-1}$ **h.** $\frac{1}{x^2-9x+20}-\frac{1}{x^2-11x+30}$

a. $\frac{a}{5}+\frac{2a}{5}$

$=\frac{3a}{5}$

b. $\frac{8}{x}-\frac{3}{x}$

$=\frac{5}{x}$

c. $\frac{7}{3m}+\frac{3}{4m}-\frac{8}{m}$

$=\frac{28}{12m}+\frac{9}{12m}-\frac{96}{12m}$

$=-\frac{59}{12m}$

d. $\frac{9}{x+2}+\frac{1}{x}$

$=\frac{9x+x+2}{x(x+2)}$

$=\frac{10x+2}{x(x+2)}$

e. $\frac{1}{m+2}-\frac{2}{m+3}$

$=\frac{(m+3)-2(m+2)}{(m+2)(m+3)}$

$=\frac{m+3-2m-4}{(m+2)(m+3)}$

$=\frac{-m-1}{(m+2)(m+3)}$

$=\frac{-(m+1)}{(m+2)(m+3)}$

f. $\frac{a+3}{a^2-4}+\frac{1}{a+2}$

$=\frac{a+3}{(a-2)(a+2)}+\frac{1}{a+2}$

$=\frac{a+3+a-2}{(a-2)(a+2)}$

$=\frac{2a+1}{(a-2)(a+2)}$ //

$=\frac{2a+1}{a^2-4}$

g. $\dfrac{2}{x^2-x-2}-\dfrac{1}{x^2-1}$

$=\dfrac{2}{(x-2)(x+1)}-\dfrac{1}{(x-1)(x+1)}$

$=\dfrac{2(x-1)-(x-2)}{(x-2)(x+1)(x-1)}$

$=\dfrac{2x-2-x+2}{(x-2)(x+1)(x-1)}$

$=\dfrac{x}{(x-2)(x+1)(x-1)}$

x^2-x-2
$=x^2-2x+x-2$
$=x(x-2)+1(x-2)$
$=(x-2)(x+1)$

x^2-1
$=(x-1)(x+1)$

h. $\dfrac{1}{x^2-9x+20}-\dfrac{1}{x^2-11x+30}$

$=\dfrac{1}{(x-4)(x-5)}-\dfrac{1}{(x-5)(x-6)}$

$=\dfrac{(x-6)-(x-4)}{(x-4)(x-5)(x-6)}$

$=\dfrac{x-6-x+4}{(x-4)(x-5)(x-6)}$

$=\dfrac{-2}{(x-4)(x-5)(x-6)}$

$x^2-9x+20$
$=x^2-4x-5x+20$
$=x(x-4)-5(x-4)$
$=(x-4)(x-5)$

$x^2-11x+30$
$=x^2-5x-6x+30$
$=x(x-5)-6(x-5)$
$=(x-5)(x-6)$

7.1 අභ්‍යාසය

පහත දැක්වෙන වීජීය භාග සුළු කරන්න.

a. $\dfrac{6}{x}\times\dfrac{2}{3x}$

b. $\dfrac{x}{5}\times\dfrac{3}{xy}$

c. $\dfrac{2a}{15}\times\dfrac{5}{9}$

d. $\dfrac{4m}{5n}\times\dfrac{3}{2m}$

e. $\dfrac{x+1}{8}\times\dfrac{2x}{x+1}$

f. $\dfrac{3a-6}{3a}\times\dfrac{1}{a-2}$

g. $\dfrac{x^2}{2y+5}\times\dfrac{4y+10}{3x}$

h. $\dfrac{m^2-4}{m+1}\times\dfrac{m^2+2m+1}{m+2}$

i. $\dfrac{x^2-5x+6}{x^2-1}\times\dfrac{x^2-2x-3}{x^2-9}$

j. $\dfrac{a^2-b^2}{a^2-2ab+b^2}\times\dfrac{2a-2b}{a^2+ab}$

a. $\frac{6}{x} \times \frac{2}{3x}$

$= \frac{4}{x^2}$

b. $\frac{x}{5} \times \frac{3}{xy}$

$= \frac{3}{5y}$

c. $\frac{2a}{15} \times \frac{5}{9}$

$= \frac{2a}{27}$

d. $\frac{4m}{5n} \times \frac{3}{2m}$

$= \frac{6}{5n}$

e. $\frac{x+1}{8} \times \frac{2x}{x+1}$

$= \frac{x}{4}$

f. $\frac{3a-6}{3a} \times \frac{1}{a-2}$

$= \frac{3(a-2)}{3a} \times \frac{1}{a-2}$

$= \frac{1}{a}$

g. $\frac{x^2}{2y+5} \times \frac{4y+10}{3x}$

$= \frac{x^2}{2y+5} \times \frac{2(2y+5)}{3x}$

$= \frac{2x}{3}$

h. $\frac{m^2-4}{m+1} \times \frac{m^2+2m+1}{m+2}$

$= \frac{(m-2)(m+2)}{m+1} \times \frac{(m+1)(m+1)}{m+2}$

$= (m-2)(m+1)$

i. $\frac{x^2-5x+6}{x^2-1} \times \frac{x^2-2x-3}{x^2-9}$

$= \frac{(x-2)(x-3)}{(x-1)(x+1)} \times \frac{(x-3)(x+1)}{(x-3)(x+3)}$

$= \frac{(x-2)(x-3)}{(x-1)(x+3)}$

x^2-2x-3

$= x^2-3x+x-3$

$= x(x-3)+1(x-3)$

$= (x-3)(x+1)$

j. $\frac{a^2-b^2}{a^2-2ab+b^2} \times \frac{2a-2b}{a^2+ab}$

$= \frac{(a-b)(a+b)}{(a-b)(a-b)} \times \frac{2(a-b)}{a(a+b)}$

$= \frac{2}{a}$

$a^2-2ab+b^2$

$= a^2-ab-ab+b^2$

$= a(a-b)-b(a-b)$

$= (a-b)(a-b)$

7.2 අභ්‍යාසය

පහත දැක්වෙන වීජීය භාග සුළු කරන්න.

a. $\frac{5}{x} \div \frac{10}{x}$

b. $\frac{m}{3n} \div \frac{m}{2n^2}$

c. $\frac{x+1}{y} \div \frac{2(x+1)}{x}$

d. $\frac{2a-4}{2a} \div \frac{a-2}{3}$

e. $\frac{x^2+4x}{3y} \div \frac{x^2-16}{12y^2}$

f. $\frac{p^2+pq}{p^2-pr} \div \frac{p^2-q^2}{p^2-r^2}$

g. $\frac{m^2-4}{m+1} \div \frac{m+2}{m^2+2m+1}$

h. $\frac{x^2y^2+3xy}{4x^2-1} \div \frac{xy+3}{2x+1}$

i. $\frac{a^2-5a}{a^2-4a-5} \div \frac{a^2-a-2}{a^2+2a+1}$

j. $\frac{x^2-8x}{x^2-4x-5} \times \frac{x^2+2x+1}{x^3-8x^2} \div \frac{x^2+2x-3}{x-5}$

a. $\frac{5}{x} \div \frac{10}{x}$

$= \frac{\cancel{5}}{\cancel{x}} \times \frac{\cancel{x}}{10_{\,2}}$

$= \frac{1}{2}$

b. $\frac{m}{3n} \div \frac{m}{2n^2}$

$= \frac{\cancel{m}}{\cancel{3n}} \times \frac{2n^{\cancel{2}}}{\cancel{m}}$

$= \frac{2n}{3}$

c. $\frac{x+1}{y} \div \frac{2(x+1)}{x}$

$= \frac{\cancel{x+1}}{y} \times \frac{x}{2\cancel{(x+1)}}$

$= \frac{x}{2y}$

d. $\frac{2a-4}{2a} \div \frac{a-2}{3}$

$= \frac{2a-4}{2a} \times \frac{3}{a-2}$

$= \frac{\cancel{2}(a-\cancel{2})}{\cancel{2}a} \times \frac{3}{\cancel{a-2}}$

$= \frac{3}{a}$

e. $\frac{x^2+4x}{3y} \div \frac{x^2-16}{12y^2}$

$= \frac{x^2+4x}{3y} \times \frac{12y^2}{x^2-16}$

$= \frac{x(x+4)}{\cancel{3y}} \times \frac{^{4}\cancel{12}y^{\cancel{2}\ y}}{(x-4)\cancel{(x+4)}}$

$= \frac{4xy}{x-4}$

f. $\dfrac{p^2+pq}{p^2-pr} \div \dfrac{p^2-q^2}{p^2-r^2}$

$= \dfrac{p^2+pq}{p^2-pr} \times \dfrac{p^2-r^2}{p^2-q^2}$

$= \dfrac{p(p+q)}{p(p-r)} \times \dfrac{(p-r)(p+r)}{(p-q)(p+q)}$

$= \dfrac{p+r}{p-q}$

g. $\dfrac{m^2-4}{m+1} \div \dfrac{m+2}{m^2+2m+1}$

$= \dfrac{m^2-4}{m+1} \times \dfrac{m^2+2m+1}{m+2}$

$= \dfrac{(m-2)(m+2)}{m+1} \times \dfrac{(m+1)(m+1)}{m+2}$

$= (m-2)(m+1)$

h. $\dfrac{x^2y^2+3xy}{4x^2-1} \div \dfrac{xy+3}{2x+1}$

$= \dfrac{x^2y^2+3xy}{4x^2-1} \times \dfrac{2x+1}{xy+3}$

$= \dfrac{xy(xy+3)}{(2x-1)(2x+1)} \times \dfrac{2x+1}{xy+3}$

$= \dfrac{xy}{(2x-1)}$

i. $\dfrac{a^2-5a}{a^2-4a-5} \div \dfrac{a^2-a-2}{a^2+2a+1}$

$= \dfrac{a^2-5a}{a^2-4a-5} \times \dfrac{a^2+2a+1}{a^2-a-2}$

$= \dfrac{a(a-5)}{(a-5)(a+1)} \times \dfrac{(a+1)(a+1)}{(a-2)(a+1)}$

$= \dfrac{a}{(a-2)}$

j. $\dfrac{x^2-8x}{x^2-4x-5} \times \dfrac{x^2+2x+1}{x^3-8x^2} \div \dfrac{x^2+2x-3}{x-5}$

$= \dfrac{x^2-8x}{x^2-4x-5} \times \dfrac{x^2+2x+1}{x^3-8x^2} \times \dfrac{x-5}{x^2+2x-3}$

$= \dfrac{x(x-8)}{(x-5)(x+1)} \times \dfrac{(x+1)(x+1)}{x^2(x-8)} \times \dfrac{x-5}{(x+3)(x-1)}$

$= \dfrac{x+1}{x(x+3)(x-1)}$