

Rational Expressions

State the excluded values for each.

1) $\frac{60x^3}{12x}$ $5x^2$

2) $\frac{70v^2}{100v}$ = $\frac{7v}{10}$

3) $\frac{m+7}{m^2+4m-21} = \frac{\cancel{m+7}}{(m-3)\cancel{(m+7)}}$
 $\frac{1}{m-3}$

4) $\frac{n^2+6n+5}{n+1} = \frac{(n+5)\cancel{(n+1)}}{\cancel{(n+1)}}$
 $n+5$

5) $\frac{35x-35}{25x-40} = \frac{35(x-1)}{5(5x-8)}$

6) $\frac{-n^2+16n-63}{n^2-2n-35} = \frac{-1(n^2-16n+63)}{(n-7)(n+5)}$
 $\frac{-1\cancel{(n-7)}(n-9)}{\cancel{(n-7)}(n+5)} = \frac{-1(n-9)}{(n+5)}$

Simplify each and state the excluded values.

7) $\frac{p+4}{p^2+6p+8} = \frac{\cancel{p+4}}{(p+4)(p+2)}$
 $\frac{1}{p+2}$

8) $\frac{9}{15a-15} = \frac{9}{15(a-1)} = \frac{3}{5(a-1)}$

9) $\frac{2a^2+10a}{3a^2+15a} = \frac{2a(a+5)}{3a(a+5)}$
 $\frac{2}{3}$

10) $\frac{p^2-3p-10}{p^2+p-2} = \frac{(p-5)(p+2)}{(p+2)(p-1)}$
 $\frac{p-5}{p-1}$

11) $\frac{x^2+x-6}{x^2+8x+15} = \frac{(x+3)(x-2)}{(x+3)(x+5)}$
 $\frac{x-2}{x+5}$

12) $\frac{a^2+5a+4}{a^2+9a+20} = \frac{\cancel{(a+4)}(a+1)}{(a+5)\cancel{(a+4)}}$
 $\frac{a+1}{a+5}$