Key

Simplifying Rational Expressions

Simplify each expression.

1) $\frac{35n}{35n^2} = \boxed{\frac{1}{n}}$

2) $\frac{45x^2}{25x} = \boxed{\frac{9x}{5}}$

3) $\frac{x-8}{x^2+x-72} = \frac{(x-8)}{(x-8)(x+9)} = \boxed{\frac{1}{(x+9)}}$

4) $\frac{p^2-3p-54}{p-9} = \frac{(p-9)(p+6)}{(p-9)} = \boxed{p+6}$

5) $\frac{56v-72}{32v} = \frac{8(7v-9)}{32v} = \boxed{\frac{(7v-9)}{4v}}$

6) $\frac{a+7}{a^2+6a-7} = \frac{(a+7)}{(a+7)(a-1)} = \boxed{\frac{1}{(a-1)}}$

* 7) $\frac{5v^2-5v}{1-v} = \frac{5v(v-1)}{(1-v)} = \boxed{-5v}$

8) $\frac{2-x}{x^2+4x-12} = \frac{(2-x)}{(x+6)(x-2)} = \boxed{-\frac{1}{(x+6)}}$

9) $\frac{v^2+7v-30}{9v^2+90v} = \frac{(v+10)(v-3)}{9v(v+10)} = \boxed{\frac{(v-3)}{9v}}$

10) $\frac{b^2+b-30}{3b^2+18b} = \frac{(b+6)(b-5)}{3b(b+6)} = \boxed{\frac{(b-5)}{3b}}$

11) $\frac{x^2-7x-18}{x^2-81} = \frac{(x-9)(x+2)}{(x-9)(x+9)} = \boxed{\frac{(x+2)}{(x+9)}}$

12) $\frac{3b^2+3b-6}{5b^2+40b-45} = \frac{3(b^2+b-2)}{5(b^2+8b-9)} = \frac{3(b+2)(b-1)}{5(b+9)(b-1)} = \boxed{\frac{3(b+2)}{5(b+9)}}$

13) $\frac{3a^2+21a-90}{4a^2-36} = \frac{3(a^2+7a-10)}{4(a^2-9)} = \frac{3(a+10)(a-3)}{4(a-3)(a+3)} = \boxed{\frac{3(a+10)}{4(a+3}}$

14) $\frac{m^2-6m-40}{2m^2-16m-40} = \frac{(m-10)(m+4)}{2(m^2-8m-20)} = \frac{(m-10)(m+4)}{2(m-10)(m+2)} = \boxed{\frac{(m+4)}{2(m+2)}}$

15) $\frac{v^3+11v^2+18v}{v^2+v-2}$

$\frac{v(v^2+11v+18)}{(v+2)(v-1)} = \frac{v(v+2)(v+9)}{(v+2)(v-1)} = \boxed{\frac{v(v+9)}{(v-1)}}$

16) $\frac{2x^3+16x^2+24x}{x^2-x-6} = \frac{2x(x^2+8x+12)}{(x-3)(x+2)} = \frac{2x(x+6)(x+2)}{(x-3)(x+2)} = \boxed{\frac{2x(x+6)}{(x-3)}}$

17) $\frac{2y^2-12y+16}{y^2+y-6}$

$\frac{2(y^2-6y+8)}{(y+3)(y-2)} = \frac{2(y-2)(y-4)}{(y+3)(y-2)} = \boxed{\frac{2(y-4)}{(y+3)}}$

18) $\frac{3x^2+5x-2}{7x^2+12x-4}$

a.c | +b
-6 | 5
$\boxed{2} = \frac{6}{3}$ | $\frac{-1}{3}$

a.c | +b
-28 | 12
$\boxed{12} = 14$ | $\boxed{-2}$

$= \frac{(x+2)(3x-1)}{(x+2)(7x-2)} = \boxed{\frac{(3x-1)}{(7x-2)}}$