

Simplifying Rational Expressions

Simplify each expression.

$$1) \frac{-36x^3}{42x^2} = -\frac{36}{42} \cdot \frac{x^3}{x^2}$$

$$-\frac{6}{7} \cdot \frac{x}{1} = -\frac{6x}{7}$$

$$2) \frac{16r^2}{16r^3} = \frac{\cancel{16}}{\cancel{16}} \cdot \frac{r^2}{r^3} = \frac{1}{r}$$

$$3) \frac{16p^2}{28p} \quad \frac{4p}{7}$$

$$4) \frac{32n^2}{24n}$$

$$5) \frac{70n^2}{28n}$$

$$6) \frac{15n}{30n^3} = \frac{1}{2n^2}$$

$$7) \frac{2r-4}{r-2} = \frac{2(\cancel{r-2})}{\cancel{r-2}} = 2$$

$$8) \frac{45}{10a-10} = \frac{45}{10(a-1)} = \frac{9}{2(a-1)}$$

$$9) \frac{x-4}{3x^2-12x} = \frac{\cancel{x-4}}{3x(\cancel{x-4})} = \frac{1}{3x}$$

$$10) \frac{15a-3}{24} = \frac{3(5a-1)}{24} = \frac{5a-1}{8}$$

$$11) \frac{v-5}{v^2-10v+25} = \frac{\cancel{v-5}}{(\cancel{v-5})(v-5)}$$

$$= \frac{1}{v-5}$$

$$12) \frac{x+6}{x^2+5x-6} = \frac{\cancel{x+6}}{(x\cancel{+6})(x-1)} = \frac{1}{x-1}$$