

## Simplifying rational functions

**Simplify by canceling common factors in the numerator and denominator and state any values that are not in the domain.**

1)  $\frac{60n^2}{90n^3}$

2)  $\frac{24m^2}{80m}$

3)  $\frac{9n - 12}{18}$

4)  $\frac{x^2 + 4x - 60}{x - 6}$

5)  $\frac{18v^3}{14v^2 - 12v}$

6)  $\frac{18m^2 + 36m}{12m}$

7)  $\frac{35m + 70}{35m - 49}$

8)  $\frac{n^2 + 3n - 4}{4n - 4}$

9)  $\frac{x^2 + 9x + 14}{x^2 - x - 56}$

10)  $\frac{x^2 + 3x - 70}{x^2 - 100}$

$$11) \frac{x^2 - 2x - 15}{5x - 25}$$

$$12) \frac{r^2 + 7r - 8}{7r - 7r^2}$$

$$13) \frac{7n^2 - 84n + 140}{n^2 - 20n + 100}$$

$$14) \frac{3a^2 - 18a - 48}{8 + 7a - a^2}$$

## Answers to Simplifying rational functions

1)  $\frac{2}{3n}$ ;  $\{0\}$

4)  $x + 10$ ;  $\{6\}$

8)  $\frac{n+4}{4}$ ;  $\{1\}$

12)  $\frac{-r-8}{7r}$ ;  $\{0, 1\}$

2)  $\frac{3m}{10}$ ;  $\{0\}$

5)  $\frac{9v^2}{7v-6}$ ;  $\left\{0, \frac{6}{7}\right\}$

9)  $\frac{x+2}{x-8}$ ;  $\{8, -7\}$

13)  $\frac{7(n-2)}{n-10}$ ;  $\{10\}$

3)  $\frac{3n-4}{6}$ ; No excluded values.

6)  $\frac{3(m+2)}{2}$ ;  $\{0\}$

10)  $\frac{x-7}{x-10}$ ;  $\{10, -10\}$

14)  $-\frac{3(a+2)}{1+a}$ ;  $\{8, -1\}$

7)  $\frac{5(m+2)}{5m-7}$ ;  $\left\{\frac{7}{5}\right\}$

11)  $\frac{x+3}{5}$ ;  $\{5\}$