

## Simplifying Rational Expressions

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**Simplify each and state the excluded values.**

1)  $\frac{10x^2}{15x^3}$

2)  $\frac{12n}{16n}$

3)  $\frac{6r-9}{6}$

4)  $\frac{3x^2+6x}{x+2}$

5)  $\frac{25n^2}{25n^2+15n}$

6)  $\frac{15m+6}{9}$

7)  $\frac{63b^2+54b}{63b^2+36b}$

8)  $\frac{16p^2-40p}{56p^2-40p}$

9)  $\frac{4a^2+16a}{a^2+14a+40}$

10)  $\frac{v^2+9v+14}{v^2+11v+28}$

11)  $\frac{28k^2-20k}{8k^2-4k}$

12)  $\frac{-x^2+16x-63}{x^2-14x+49}$

13)  $\frac{x^2-11x+24}{x^2-11x+24}$

14)  $\frac{x^2-x-56}{8x+56}$

15)  $\frac{5k^2-55k+50}{4k^3-20k^2-200k}$

16)  $\frac{15p^2+123p-270}{5p^2+40p-100}$

17)  $\frac{7x^2-42x-49}{4x^3-8x^2-140x}$

18)  $\frac{-2n^2+25n-72}{4n^3-16n^2-128n}$

19)  $\frac{4x^3-12x^2}{-21x^3+75x^2-36x}$

20)  $\frac{7k^2+28k}{8k^2-42k+40}$

## Answers to Simplifying Rational Expressions (ID: 1)

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

2)  $\frac{3}{4}; \{0\}$

3)  $\frac{2r-3}{2};$  No excluded values.

4)  $3x; \{-2\}$

5)  $\frac{5n}{5n+3}; \left\{0, -\frac{3}{5}\right\}$

6)  $\frac{5m+2}{3};$  No excluded values.

7)  $\frac{7b+6}{7b+4}; \left\{0, -\frac{4}{7}\right\}$

8)  $\frac{2p-5}{7p-5}; \left\{0, \frac{5}{7}\right\}$

9)  $\frac{4a}{a+10}; \{-10, -4\}$

10)  $\frac{v+2}{v+4}; \{-7, -4\}$

11)  $\frac{7k-5}{2k-1}; \left\{0, \frac{1}{2}\right\}$

12)  $\frac{(x-9) \cdot -1}{x-7}; \{7\}$

13)  $1; \{8, 3\}$

14)  $\frac{x-8}{8}; \{-7\}$

15)  $\frac{5(k-1)}{4k(k+5)}; \{0, 10, -5\}$

16)  $\frac{3(5p-9)}{5(p-2)}; \{2, -10\}$

17)  $\frac{7(x+1)}{4x(x+5)}; \{0, 7, -5\}$

18)  $\frac{-2n+9}{4n(n+4)}; \{0, 8, -4\}$

19)  $\frac{4x}{3(-7x+4)}; \left\{0, 3, \frac{4}{7}\right\}$

20)  $\frac{7k(k+4)}{2(k-4)(4k-5)}; \left\{4, \frac{5}{4}\right\}$