Math 2   Name_____

Math 2 Unit 5.3 Simplifying Rational Expressions Example   Period____

Simplify each and state the excluded values.

1) $\dfrac{81x^3}{18x^2}$

2) $\dfrac{72r^2}{72r}$

3) $-\dfrac{80x^2}{100x}$

4) $\dfrac{50x^3}{30x^2}$

5) $\dfrac{90b}{30b^2}$

6) $\dfrac{20n^2}{28n}$

7) $\dfrac{k+10}{4k+40}$

8) $\dfrac{b+4}{5b^2+27b+28}$

9) $\dfrac{7x^2-37x+36}{x-4}$

10) $\dfrac{x-9}{2x^2-19x+9}$

11) $\dfrac{7x^2+73x+30}{x+10}$

12) $\dfrac{81n^3}{63n^2+18n}$

13) $\dfrac{12m + 16}{12m - 16}$

14) $\dfrac{49x - 63}{14x + 7}$

15) $\dfrac{40r - 32}{16r - 48}$

16) $\dfrac{2b^2 - 11b - 63}{2b^2 - 25b + 63}$

17) $\dfrac{4x + 10}{14x + 6}$

18) $\dfrac{70x - 90}{20x - 50}$

19) $\dfrac{6k^2 + 18k + 12}{2k^2 + 6k + 4}$

20) $\dfrac{3m^3 + 17m^2 - 6m}{5m^2 + 22m - 48}$

21) $\dfrac{9n^4 + 27n^3 - 90n^2}{6n^2 + 12n - 90}$

22) $\dfrac{4v^2 - 22v + 28}{21v^2 - 57v + 30}$

23) $\dfrac{5x^2 + 15x - 20}{3x^2 + 15x + 12}$

24) $\dfrac{2x^2 + 23x + 45}{4x^3 + 40x^2 + 36x}$

Math 2   Name_____

Math 2 Unit 5.3 Simplifying Rational Expressions Example   Period____

Simplify each and state the excluded values.

1) $\dfrac{81x^3}{18x^2}$

$\dfrac{9x}{2}$; $\{0\}$

2) $\dfrac{72r^2}{72r}$

r ; $\{0\}$

3) $-\dfrac{80x^2}{100x}$

$-\dfrac{4x}{5}$; $\{0\}$

4) $\dfrac{50x^3}{30x^2}$

$\dfrac{5x}{3}$; $\{0\}$

5) $\dfrac{90b}{30b^2}$

$\dfrac{3}{b}$; $\{0\}$

6) $\dfrac{20n^2}{28n}$

$\dfrac{5n}{7}$; $\{0\}$

7) $\dfrac{k+10}{4k+40}$

$\dfrac{1}{4}$; $\{-10\}$

8) $\dfrac{b+4}{5b^2+27b+28}$

$\dfrac{1}{5b+7}$; $\left\{-4, -\dfrac{7}{5}\right\}$

9) $\dfrac{7x^2-37x+36}{x-4}$

$7x-9$; $\{4\}$

10) $\dfrac{x-9}{2x^2-19x+9}$

$\dfrac{1}{2x-1}$; $\left\{9, \dfrac{1}{2}\right\}$

11) $\dfrac{7x^2+73x+30}{x+10}$

$7x+3$; $\{-10\}$

12) $\dfrac{81n^3}{63n^2+18n}$

$\dfrac{9n^2}{7n+2}$; $\left\{0, -\dfrac{2}{7}\right\}$

13) $\dfrac{12m + 16}{12m - 16}$

$\dfrac{3m + 4}{3m - 4}$; $\left\{\dfrac{4}{3}\right\}$

14) $\dfrac{49x - 63}{14x + 7}$

$\dfrac{7x - 9}{2x + 1}$; $\left\{-\dfrac{1}{2}\right\}$

15) $\dfrac{40r - 32}{16r - 48}$

$\dfrac{5r - 4}{2(r - 3)}$; $\{3\}$

16) $\dfrac{2b^2 - 11b - 63}{2b^2 - 25b + 63}$

$\dfrac{2b + 7}{2b - 7}$; $\left\{9, \dfrac{7}{2}\right\}$

17) $\dfrac{4x + 10}{14x + 6}$

$\dfrac{2x + 5}{7x + 3}$; $\left\{-\dfrac{3}{7}\right\}$

18) $\dfrac{70x - 90}{20x - 50}$

$\dfrac{7x - 9}{2x - 5}$; $\left\{\dfrac{5}{2}\right\}$

19) $\dfrac{6k^2 + 18k + 12}{2k^2 + 6k + 4}$

3 ; $\{-2, -1\}$

20) $\dfrac{3m^3 + 17m^2 - 6m}{5m^2 + 22m - 48}$

$\dfrac{m(3m - 1)}{5m - 8}$; $\left\{\dfrac{8}{5}, -6\right\}$

21) $\dfrac{9n^4 + 27n^3 - 90n^2}{6n^2 + 12n - 90}$

$\dfrac{3n^2(n - 2)}{2(n - 3)}$; $\{3, -5\}$

22) $\dfrac{4v^2 - 22v + 28}{21v^2 - 57v + 30}$

$\dfrac{2(2v - 7)}{3(7v - 5)}$; $\left\{2, \dfrac{5}{7}\right\}$

23) $\dfrac{5x^2 + 15x - 20}{3x^2 + 15x + 12}$

$\dfrac{5(x - 1)}{3(x + 1)}$; $\{-4, -1\}$

24) $\dfrac{2x^2 + 23x + 45}{4x^3 + 40x^2 + 36x}$

$\dfrac{2x + 5}{4x(x + 1)}$; $\{0, -9, -1\}$