

4-2&3 Assignment

Date _____ Period _____

Simplify each and state the excluded values.

1) $\frac{90x^3}{40x^2}$

$\frac{9x}{4}; \{0\}$

2) $\frac{v^2 - 3v - 70}{v + 7}$

$v - 10; \{-7\}$

3) $\frac{42x^2 + 54x}{24x}$

$\frac{7x + 9}{4}; \{0\}$

4) $\frac{6x^3 - 6x^2}{x^2 + 7x - 8}$

$\frac{6x^2}{x + 8}; \{1, -8\}$

5) $\frac{r^2 - 7r - 30}{r^2 - 12r + 20}$

$\frac{r + 3}{r - 2}; \{10, 2\}$

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

$\frac{2(x + 1)}{2x + 1}; \left\{-\frac{1}{2}\right\}$

7) $\frac{2a^2 + 16a - 40}{3a^3 + 36a^2 + 60a}$

$\frac{2(a - 2)}{3a(a + 2)}; \{0, -10, -2\}$

8) $\frac{7r^2 + 14r}{r^2 - 2r - 63}$

$\frac{7r(r + 2)}{(r - 9)(r + 7)}; \{9, -7\}$

Simplify each expression.

9) $\frac{p + 3}{p^2 + 7p + 12} \cdot \frac{10p + 40}{10}$

1

10) $\frac{r - 1}{r - 2} \cdot \frac{3r - 6}{r - 1}$

3

11) $\frac{10r - 20}{r - 7} \cdot \frac{r^2 - 8r + 7}{r^2 + 7r - 8}$

$\frac{10(r - 2)}{r + 8}$

12) $\frac{x + 4}{9x + 36} \cdot \frac{3x + 6}{3x + 30}$

$\frac{x + 2}{9(x + 10)}$

13) $\frac{x + 9}{7} \div \frac{x - 5}{7x - 35}$

$x + 9$

14) $\frac{7}{20x + 80} \div \frac{1}{20x + 80}$

7

15) $\frac{v^2 + 12v + 27}{v^2 - 14v + 48} \div \frac{v^2 + 8v - 9}{v^2 - 9v + 8}$

$\frac{v + 3}{v - 6}$

16) $\frac{x - 9}{x^2 - 5x + 4} \div \frac{9x^2 - 81x}{9x^2 - 27x}$

$\frac{x - 3}{(x - 4)(x - 1)}$

Review: State the number of complex zeros for each function.

17) $f(x) = x^5 + 5x^4 - 7x^3 - 39x^2$

5

18) $f(x) = x^9 - 8x^6 - x^3 + 8$

9