

Unit 7 Review

Date _____ Period _____

Simplify each expression.

1) $\frac{30}{35x + 10}$

2) $\frac{10r^2 + 50r}{r + 5}$

3) $\frac{72r}{24r^2 - 40r}$

4) $\frac{7x^2 + 42x}{x + 6}$

5) $\frac{x - 7}{8x - 56}$

6) $\frac{p - 3}{3 - p} \div \frac{1}{4p + 36}$

7) $\frac{9p}{p^2 + 10p + 24} \cdot \frac{8}{9p}$

8) $\frac{n + 6}{n^2 - 10n + 9} \div \frac{1}{n - 9}$

9) $\frac{n + 7}{n^2 + 11n + 10} \div \frac{n + 7}{n^2 + 5n - 50}$

10) $\frac{9x - 81}{10} \cdot \frac{10}{9x + 36}$

$$11) \frac{4a-3}{18a^2-54a} + \frac{a-4}{18a^2-54a}$$

$$12) \frac{4x+1}{6x-24} - \frac{x-6}{6x-24}$$

$$13) \frac{x+1}{6x^2-18x} + \frac{6x-6}{6x^2-18x}$$

$$14) \frac{x+1}{x^2+2x-24} - \frac{x+5}{x^2+2x-24}$$

$$15) \frac{2x-5}{x^2-7x+10} - \frac{x+3}{x^2-7x+10}$$

$$16) \frac{5v}{v-6} - \frac{4}{4v^3}$$

$$17) \frac{x-5}{6x^2-8x} + \frac{2}{3}$$

$$18) \frac{5}{x-3} - \frac{5}{x-4}$$

$$19) \frac{5}{2a^2} + \frac{a-4}{a+6}$$

$$20) \frac{4}{2x+4} + \frac{5}{2x}$$

$$21) \frac{\frac{4}{u}}{\frac{4}{2u+5}}$$

$$22) \frac{\frac{10}{u^2}}{\frac{5}{2}}$$

$$23) \frac{\frac{4}{x^2}}{\frac{16}{3}}$$

$$24) \frac{\frac{1}{5}}{\frac{25}{m^2}}$$

$$25) \frac{\frac{1}{2}}{\frac{x}{4}}$$

Solve each equation. Remember to check for extraneous solutions.

$$26) \frac{1}{k^2} + \frac{6}{k} = \frac{k+3}{k^2}$$

$$27) \frac{1}{5p} + \frac{1}{5p^2} = \frac{p-3}{p^2}$$

$$28) \frac{2}{n} = \frac{1}{n} - \frac{n-3}{2n}$$

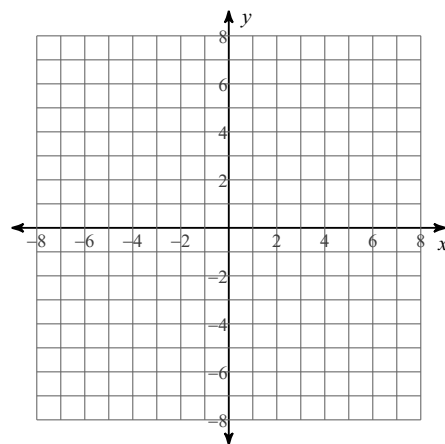
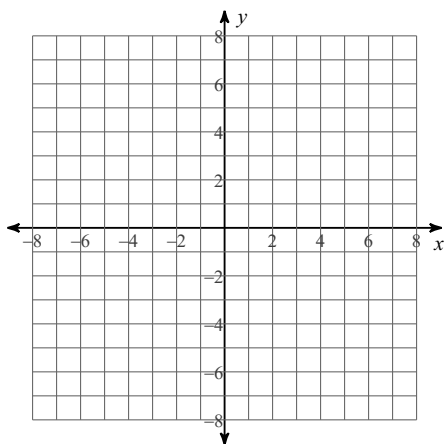
$$29) \frac{3n-12}{2n} - \frac{5}{4n} = \frac{1}{2}$$

$$30) \frac{v-1}{3v^2} + \frac{v-3}{v^2} = \frac{4v-16}{v^2}$$

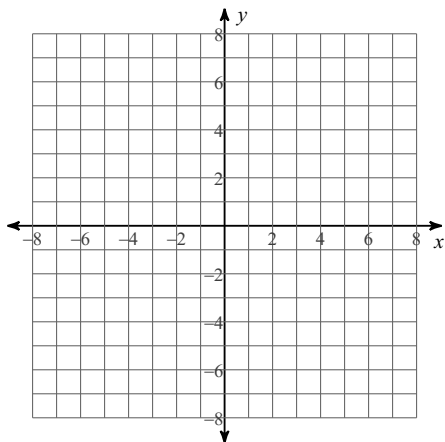
Identify the holes, vertical asymptotes, horizontal asymptote, and domain of each. Then sketch the graph.

$$31) f(x) = \frac{x^2 + 6x + 8}{-4x^2 + 8x + 32}$$

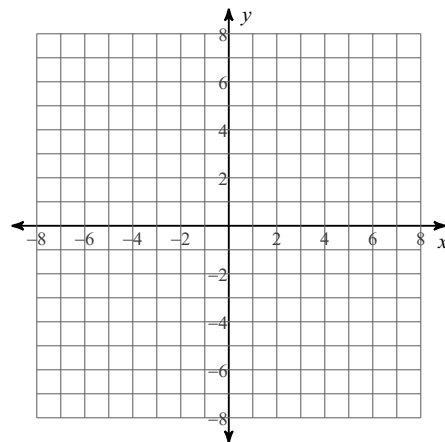
$$32) f(x) = \frac{3x}{x^2 - 3x}$$



$$33) f(x) = \frac{x - 4}{4x^2 - 24x + 32}$$



$$34) f(x) = \frac{1}{-4x - 12}$$



$$35) f(x) = \frac{-2x - 2}{x - 2}$$

