

Multiplying and Dividing Rational Expressions

Date _____ Period _____

CLASS EXAMPLES: Simplify each expression.

1)
$$\frac{v+9}{v^2-64} \cdot \frac{v^2+10v+16}{v+2}$$

2)
$$\frac{8x-80}{x^2-3x-70} \cdot \frac{10x^2+70x}{8x+64}$$

Simplify each expression.

3)
$$\frac{1}{x-8} \cdot \frac{x^2-10x+16}{6x}$$

4)
$$\frac{6v}{12v^2+36v} \cdot \frac{8v+24}{v+2}$$

5)
$$\frac{4n^2-4n}{n-1} \cdot \frac{1}{5n+15}$$

6)
$$\frac{8n-8}{n^2-9n+8} \cdot \frac{3n-24}{3n+3}$$

7)
$$\frac{4p-12}{p^2+3p-18} \cdot \frac{p+6}{p^2-4p+4}$$

8)
$$\frac{x^2+7x-8}{x+8} \cdot \frac{x^2-x-56}{x^2-9x+8}$$

CLASS EXAMPLES: Simplify each expression.

$$9) \frac{x-4}{3x-12} \div \frac{1}{3x-18}$$

$$10) \frac{n^2 + 14n + 49}{5n^2 + 35n} \div \frac{n^2 - 11n + 28}{5n^2 - 35n}$$

Simplify each expression.

$$11) \frac{24a + 56}{15a + 35} \div \frac{a-3}{5}$$

$$12) \frac{8r - 40}{4r - 12} \div \frac{1}{r-3}$$

$$13) \frac{x^2 + 11x + 28}{5} \div \frac{4x^2 + 28x}{4x}$$

$$14) \frac{4a - 28}{a^2 + a - 56} \div \frac{a + 4}{a^2 + 12a + 32}$$

$$15) \frac{n^2 - n - 20}{n^2 + 2n - 8} \div \frac{n^2 - 3n - 10}{n^2 + 6n - 16}$$

$$16) \frac{n^2 + 6n + 5}{8n + 40} \div \frac{6n + 6}{n - 5}$$

Answers to Multiplying and Dividing Rational Expressions (ID: 1)

$$1) \frac{v+9}{v-8}$$

$$9) x-6$$

$$3) \frac{x-2}{6x}$$

$$11) \frac{8}{a-3}$$

$$5) \frac{4n}{5(n+3)}$$

$$13) \frac{x+4}{5}$$

$$7) \frac{4}{(p-2)^2}$$

$$15) \frac{n+8}{n+2}$$