Trigonometry/Precalculus
Multiplying/Dividing Rational Expressions
Day _____

Name
Date
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Multiply each of the following expressions. Leave your answered in their most simplified form.

1) $\frac{9y^2}{8} \cdot \frac{32x}{27y}$

2) $\frac{x^2-16}{x^2} \cdot \frac{x^2-4x}{x^2-x-12}$

3) $\frac{6-2t}{t^2+4t+4} \cdot \frac{t^3+2t^2}{t^8-9t^6}$

4) $\frac{x+4}{3x+4y} \cdot \frac{9x^2-16y^2}{2x^2+3x-20}$

5) $\frac{a^2-10a+21}{a-7} \cdot \frac{a^2+a-12}{(a-3)^2}$

6) $(10m^2+100m) \cdot \frac{18m^3-36m^2}{20m^2-40m}$

7) $\frac{x^2-16}{9-x} \cdot \frac{x^2+x-90}{x^2+14x+40}$

8) $\frac{20x-30}{2x^2-19x+35} \cdot \frac{3x^2-20x-7}{5}$

9) $\frac{-x^2+5x+24}{x^2-64} \cdot \frac{-7x}{x+8}$

Divide each of the following rational expressions:

10) $\frac{x^2-2x}{6} \div \frac{3x-6}{x}$

11) $\frac{3x+12}{12x} \div \frac{x+4}{48x^3}$

12) $\frac{7x^2}{12x} \div \frac{14x^3}{48y^3}$

13) $\frac{m^2-2m-8}{8m+24} \div \frac{2m-8}{m^2+7m+12}$

14) $28p^2q^4 \div \frac{4pq^4}{5r}$

15) $\frac{y^2-9}{y^2} \div \frac{y^5+3y^4}{y+2}$

16) $\frac{3x^2+4x+1}{3x^2-5x-2} \div \frac{x^2-2x-3}{-5x^2+25x-30}$

17) $\frac{\frac{2x^2-50}{8}}{x-5}$

18) $\frac{2x^2-2x-4}{x^2+2x-8} \div \frac{4x^2-100}{x^2-x-20}$

19) $\frac{2x^2-x-15}{x^2-2x-3} \div \frac{2x^2+3x-5}{1-x^2}$