Secondary Math 2

Name key

# Chapter 13 Review

Date _____ Period ____

**Factor each completely.**

1) $4a^3 - 48a^2 + 128a$

$4a(a^2-12a+32)$

$4a(a-4)(a-8)$

2) $5m^2 + 2m - 7$

ac

$-35$

$5, -7$

$-5, 7$

$5m^2-5m+7m-7$

$5m(m-1)+7(m-1)$

$(5m+7)(m-1)$

**Simplify each expression.**

3) $\dfrac{n^2 - 6n - 7}{n^2 - 4n - 21}$

$\dfrac{(n-7)(n+1)}{(n-7)(n+3)}$

$= \dfrac{n+1}{n+3}$

4) $\dfrac{3r^3 + 3r^2 - 6r}{6r^3 + 18r^2 + 12r}$

$\dfrac{3r(r^2+r-2)}{6r(r^2+3r+2)} = \dfrac{3r(r-1)(r+2)}{2 \cdot 3r(r+1)(r+2)}$

$= \dfrac{r-1}{2(r+1)}$

5) $\dfrac{n^2 - 13n + 36}{6} \cdot \dfrac{5}{5n - 20}$

$\dfrac{(n-9)(n-4)}{6} \cdot \dfrac{5}{5(n-4)}$

$\dfrac{1\ 5(n-9)(n-4)}{6\ 30(n-4)}$

$\dfrac{n-9}{6}$

6) $\dfrac{7n + 5}{n^2 - 11n + 28} \cdot \dfrac{2n - 14}{14n + 10}$

$\dfrac{(7n+5)}{(n-7)(n-4)} \cdot \dfrac{2(n-7)}{2(7n+5)}$

$\dfrac{2(7n+5)(n-7)}{2(n-7)(n-4)(7n+5)} = \dfrac{1}{n-4}$

7) $\dfrac{6x^2+21x}{14x^3+49x^2} \div \dfrac{1}{7x^2}$

$\dfrac{3x(2x+7)}{7x^2(2x+7)} \div \dfrac{1}{7x^2}$

$\dfrac{3x(2x+7)}{7x^2(2x+7)} \to \dfrac{7x^2}{1}$

$\dfrac{3\cancel{x}^{1}\cancel{x^2}(2x+7)}{7\cancel{x^2}(2x+7)} = \dfrac{3x}{1} = \boxed{3x}$

8) $\dfrac{12x-30}{4x^2-8x-5} \div \dfrac{6x-12}{4x+2}$

$\dfrac{2(6x-15)}{4x^2-8x-5} \div \dfrac{6(x-2)}{2(2x+1)}$

ac
$-20$
$4, -5$
$-10, 2$

$(2x+1)(2x-5)$

$\dfrac{6(2x-5)}{(2x+1)(2x-5)} \to \dfrac{2(2x+1)}{6(x-2)} = \dfrac{\cancel{12}^{2}\cancel{(2x-5)}\cancel{(2x+1)}}{\cancel{6}\cancel{(2x+1)}\cancel{(2x-5)}(x-2)}$

$= \boxed{\dfrac{2}{x-2}}$

9) $\dfrac{4x}{4y} + \dfrac{5x}{2y^2} \cdot \dfrac{4y}{4y}$ $\quad \dfrac{2y^2}{2y^2}$

$\dfrac{8xy^2}{8y^3} + \dfrac{20xy}{8y^3}$

$\boxed{\dfrac{8xy^2+20xy}{8y^3}}$

OR $\dfrac{4xy^2+10xy}{4y^3}$

10) $\dfrac{6}{2b-1} + \dfrac{3}{b+5} \cdot \dfrac{(2b-1)}{(2b-1)}$ $\quad \dfrac{(b+5)}{(b+5)}$

$\dfrac{6(b+5)}{(b+5)(2b-1)} + \dfrac{3(2b-1)}{(b+5)(2b-1)}$

$\dfrac{6b+30+6b-3}{(b+5)(2b-1)} = \boxed{\dfrac{12b+27}{(b+5)(2b-1)}}$

11) $\dfrac{x+5y}{2x} - \dfrac{4x}{5} \cdot \dfrac{2x}{2x}$ $\quad \dfrac{5}{5}$

$\dfrac{5(x+5y)}{10x} - \dfrac{8x^2}{10x}$

$\boxed{\dfrac{5x+25y-8x^2}{10x}}$

12) $\dfrac{2p}{p-5} - \dfrac{5}{p+6} \cdot \dfrac{(p-5)}{(p-5)}$ $\quad \dfrac{(p+6)}{(p+6)}$

$\dfrac{2p(p+6)}{(p+6)(p-5)} - \dfrac{5(p-5)}{(p+6)(p-5)}$

$\dfrac{2p^2+12p-(5p-25)}{(p+6)(p-5)} = \boxed{\dfrac{2p^2+7p+25}{(p+6)(p-5)}}$