

Math 4
3-5 Practice

Name Key Date _____

Add, subtract and simplify the expressions below.

1) $\frac{u+5v}{8v^2u^2} - \frac{u-6v}{8v^2u^2}$

$$\frac{u+5v-u+6v}{8v^2u^2}$$

$$\frac{11v}{8v^2u^2} = \frac{11}{8vu^2}$$

3) $\frac{a+2b}{6a^3} - \frac{5a+4b}{6a^3}$

$$\frac{a+2b-5a-4b}{6a^3}$$

$$\frac{-4a-2b}{6a^3} = \frac{-2a-b}{3a^3}$$

5) $\frac{4a-5}{6a^2+30a} + \frac{a-1}{6a^2+30a}$

$$\frac{5a-6}{6a(a+5)}$$

7) $\frac{b-3}{12b+18} + \frac{4b}{12b+18}$

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

9) $\frac{7x}{2x} - \frac{x-2}{20x+16}$

$$\frac{7}{2} - \frac{x-2}{4(5x+4)}$$

$$\left(\frac{2(5x+4)}{2(5x+4)}\right) \cdot \frac{7}{2} - \frac{x-2}{4(5x+4)}$$

$$\frac{69x+58}{4(5x+4)}$$

2) $\frac{5n}{30m} + \frac{2m+4n}{30m}$

$$\frac{2m+9n}{30m}$$

4) $\frac{x+y}{18xy} - \frac{6x+y}{18xy}$

$$\frac{x+y-6x-y}{18xy}$$

$$\frac{-5x}{18xy} = \frac{-5}{18y}$$

6) $\frac{5x-4}{9x^3+27x^2} - \frac{x+6}{9x^3+27x^2}$

$$\frac{4x-10}{9x^2(x+3)}$$

8) $\frac{n-4}{n^2-n-20} + \frac{n+1}{n^2-n-20}$

$$\frac{2n-3}{(n-5)(n+4)}$$

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

$$\left(\frac{3v^2}{3v^2}\right) \frac{8}{7v-6} + \frac{4}{3v^2} \left(\frac{7v-6}{7v-6}\right)$$

$$\frac{24v^2 + 28v - 24}{3v^2(7v-6)}$$

$$11) \frac{7v}{8} - \frac{8v-4}{5v-2}$$

$$12) \frac{4}{n+7} - \frac{7}{n-2}$$

$$13) \frac{7}{3n^2+24n} - \frac{7}{2n}$$

$$14) \frac{6}{v-2} - \frac{7}{2v+7}$$

$$15) \frac{6x}{3} + \frac{7}{15x+3}$$

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

$$17) \frac{4x}{x^2+4x-5} - \frac{5}{4}$$

$$18) \frac{2}{x+3} - \frac{6x}{2x+1}$$

$$19) \frac{4x}{x+3} - \frac{4x}{x+6}$$

$$20) \frac{2x}{3x+3} - \frac{2}{x+5}$$

$$21) \frac{6}{x-2} + \frac{6}{x+1}$$

$$22) \frac{v-2}{3v^4-15v^3-18v^2} + 3v$$

Math 4 3-5 Practice w/s solutions

$$\textcircled{11} \left(\frac{5w-2}{5w-2} \right) \frac{7w}{2} - \frac{2w-4}{5w-2} \left(\frac{2w}{2} \right)$$

$$\frac{35w^2 - 14w - 64w + 32}{2(5w-2)}$$

$$\boxed{\frac{35w^2 - 78w + 32}{2(5w-2)}}$$

$$\textcircled{12} \left(\frac{n-2}{n-2} \right) \frac{4}{n+7} - \frac{7}{n-2} \left(\frac{n+7}{n+7} \right)$$

$$\frac{4n-8 - 7n-49}{(n-2)(n+7)}$$

$$\boxed{\frac{-3n-57}{(n-2)(n+7)}}$$

$$\textcircled{13} \left(\frac{2}{2} \right) \frac{7}{3n(n+2)} - \frac{7}{2n} \left(\frac{3(n+2)}{3(n+2)} \right)$$

$$\frac{14 - 21n - 168}{6n(n+2)}$$

$$\boxed{\frac{-21n - 154}{6n(n+2)}}$$

$$\textcircled{14} \left(\frac{2w+7}{2w+7} \right) \frac{6}{w-2} - \frac{7}{2w+7} \left(\frac{w-2}{w-2} \right)$$

$$\frac{6w+42 - 7w+14}{(2w+7)(w-2)}$$

$$\boxed{\frac{5w+56}{(2w+7)(w-2)}}$$

$$\textcircled{15} \left(\frac{5x+1}{5x+1} \right) \frac{6x}{3} + \frac{7}{6(5x+1)}$$

$$\boxed{\frac{30x^2 + 6x + 7}{3(5x+1)}}$$

$$\textcircled{16} \left(\frac{w+6}{w+6} \right) \frac{5w}{w-3} + \frac{5}{w+6} \left(\frac{w-3}{w-3} \right)$$

$$\boxed{\frac{5w^2 + 35w - 15}{(w+6)(w-3)}}$$

$$\textcircled{17} \left(\frac{4}{4} \right) \frac{4x}{(x+5)(x-1)} - \frac{5}{4} \left(\frac{(x+5)(x-1)}{(x+5)(x-1)} \right)$$

$$\frac{16x - 5(x^2 + 4x - 5)}{4(x+5)(x-1)}$$

$$\boxed{\frac{-5x^2 - 4x + 25}{4(x+5)(x-1)}}$$

$$\textcircled{18} \left(\frac{2x+1}{2x+1} \right) \frac{2}{x+3} - \frac{6x}{2x+1} \left(\frac{x+3}{x+3} \right)$$

$$\frac{4x+2 - 6x^2 - 18x}{(2x+1)(x+3)}$$

$$\boxed{\frac{-6x^2 - 14x + 2}{(2x+1)(x+3)}}$$

$$(19) \left(\frac{x+6}{x+6}\right) \frac{4x}{x+3} - \frac{4x}{x+6} \left(\frac{x+3}{x+3}\right)$$

$$\frac{4x^2 + 24x - 4x^2 - 12x}{(x+6)(x+3)}$$

$$\boxed{\frac{12x}{(x+6)(x+3)}}$$

$$(20) \left(\frac{x+5}{x+5}\right) \frac{2x}{3x+3} - \frac{2}{x+5} \left(\frac{3x+3}{3x+3}\right)$$

$$\frac{2x^2 + 10x - 6x - 6}{(x+5)(3x+3)}$$

$$\boxed{\frac{2x^2 + 4x - 6}{(x+5)(3x+3)}}$$

$$(21) \left(\frac{x+1}{x+1}\right) \frac{6}{x-2} + \frac{6}{x+1} \left(\frac{x-2}{x-2}\right)$$

$$\frac{6x+6+6x-12}{(x+1)(x-2)}$$

$$\boxed{\frac{12x-6}{(x+1)(x-2)}}$$

$$(22) \frac{v-2}{3v^2(v^2-5v-6)} + \frac{3v}{1}$$

$$\frac{v-2}{3v^2(v-6)(v+1)} + \frac{3v}{1} \left(\frac{3v^4 - 15v^3 - 18v^2}{3v^4 - 15v^3 - 18v^2} \right)$$

$$\boxed{\frac{9v^5 - 45v^4 - 54v^3 + v - 2}{3v^2(v-6)(v+1)}}$$