

## Worksheet 1.8

Date \_\_\_\_\_ Period \_\_\_\_\_

**Simplify each expression.**

1)  $\frac{p-1}{2p^3-4p^2} \div \frac{1}{p-2}$

2)  $\frac{a-1}{6a-6} \div \frac{1}{4a^4}$

3)  $\frac{5v}{12v-36} \div \frac{10}{90-30v}$

4)  $\frac{10}{70v} \div \frac{5-v}{v-5}$

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

6)  $\frac{n-3}{10n} \cdot \frac{10n}{n^2-13n+30}$

7)  $\frac{2p}{3} \cdot \frac{42p-42}{42-42p}$

8)  $\frac{n^2-5n+6}{n-6} \cdot \frac{1}{n-2}$

9)  $\frac{5a}{3} + \frac{6a+1}{a-3}$

10)  $\frac{3}{x+5} + \frac{5}{2}$

11)  $\frac{4}{5b-4} + \frac{6}{b-2}$

12)  $\frac{2}{m-5} + \frac{m-1}{m+2}$

13)  $6 - \frac{4v}{6v^2+6v}$

14)  $\frac{4}{2m} - \frac{m-4}{2m+4}$

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

16)  $\frac{3n}{4n^2} - \frac{n+4}{n+2}$

**Simplify each and state the excluded values.**

$$17) \frac{7x^2 - 28}{x^2 - 10x + 16}$$

$$18) \frac{8m^2 + 48m - 56}{2m^2 + 20m + 42}$$

$$19) \frac{v^2 - 17v + 70}{42 + 15v - 3v^2}$$

$$20) \frac{b^2 - b - 12}{10b^2 + 40b + 30}$$

$$21) \frac{3n^2 - 33n + 72}{27 - 9n}$$

$$22) \frac{12n^2 + 32n}{20n^3 - 52n^2 + 32n}$$

**Simplify each expression.**

$$23) \frac{5}{\frac{5}{a} - \frac{25}{9}}$$

$$24) \frac{\frac{2}{u}}{\frac{u}{9} + \frac{u^2}{4}}$$

$$25) \frac{\frac{2}{a} + \frac{2}{a}}{\frac{a}{3}}$$

$$26) \frac{\frac{m^2}{25}}{\frac{3}{m^2} + \frac{3}{m^2}}$$

$$27) \frac{\frac{1}{u}}{\frac{u+4}{25} - \frac{u^2}{u+4}}$$

$$28) \frac{x^2}{\frac{1}{4} - \frac{5}{4}}$$

$$29) \frac{\frac{25}{4}}{\frac{4}{x} - \frac{5}{x^2}}$$

$$30) \frac{5}{\frac{5x}{16} - \frac{25}{4}}$$

## Answers to Worksheet 1.8 (ID: 1)

$$1) \frac{p-1}{2p^2}$$

$$5) k+3$$

$$9) \frac{5a^2+3a+3}{3(a-3)}$$

$$13) \frac{18v+16}{3(v+1)}$$

$$17) \frac{7(x+2)}{x-8}; \{8, 2\}$$

$$20) \frac{b-4}{10(b+1)}; \{-3, -1\}$$

$$23) \frac{9a}{9-5a}$$

$$27) \frac{25u+100}{-24u^3+8u^2+16u}$$

$$30) \frac{16}{x-20}$$

$$2) \frac{2a^4}{3}$$

$$6) \frac{1}{n-10}$$

$$10) \frac{31+5x}{2(x+5)}$$

$$14) \frac{8m+8-m^2}{2m(m+2)}$$

$$18) \frac{4(m-1)}{m+3}; \{-7, -3\}$$

$$21) \frac{-n+8}{3}; \{3\}$$

$$24) \frac{72}{4u^2+9u^3}$$

$$28) -x^2$$

$$3) -\frac{5v}{4}$$

$$7) -\frac{2p}{3}$$

$$11) \frac{34b-32}{(b-2)(5b-4)}$$

$$15) \frac{-7n-16}{6(n-2)}$$

$$19) \frac{-v+10}{3(2+v)}; \{7, -2\}$$

$$22) \frac{3n+8}{(n-1)(5n-8)}; \left\{0, 1, \frac{8}{5}\right\}$$

$$25) \frac{12}{a^2}$$

$$29) \frac{25x^2}{16x-20}$$

$$4) -\frac{1}{7v}$$

$$8) \frac{n-3}{n-6}$$

$$12) \frac{-4m+9+m^2}{(m-5)(m+2)}$$

$$16) \frac{-13n+6-4n^2}{4n(n+2)}$$

$$19) \frac{-v+10}{3(2+v)}; \{7, -2\}$$

$$22) \frac{3n+8}{(n-1)(5n-8)}; \left\{0, 1, \frac{8}{5}\right\}$$

$$26) \frac{m^4}{150}$$