

## Numbers 1,2 , and 11-14 are already factored

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

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**Simplify.**

1) 
$$\frac{4(x-3)}{(x-9)(x-1)} \cdot \frac{(-x+1)(x-9)}{x+6}$$

2) 
$$\frac{(5-x)(x-9)}{(x-3)(x-5)} \cdot \frac{x-8}{x-9}$$

3) 
$$\frac{6m^3 + 30m^2}{m+10} \cdot \frac{1}{m+5}$$

4) 
$$\frac{x+2}{x^2 + 11x + 18} \cdot \frac{3}{x+2}$$

5) 
$$\frac{2r^2}{6r+6} \cdot \frac{6r+6}{4}$$

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

7) 
$$\frac{5x-40}{5x+45} \cdot \frac{5x^2 - 40x}{x-8}$$

8) 
$$\frac{n^2 + 5n - 36}{16 - 4n} \cdot \frac{4n^2}{n^2 - n - 90}$$

9) 
$$\frac{2k+6}{14k^2 + 48k + 18} \cdot \frac{7k^2 - 11k - 6}{10}$$

10) 
$$\frac{6v^2 + 7v - 90}{2v^2 + 7v - 9} \cdot \frac{v-1}{3v-10}$$

**Simplify each expression.**

11) 
$$\frac{k-6}{5} \div \frac{(k-6)^2}{(k-4)(k-6)}$$

12) 
$$\frac{10n(n-6)}{10n(6-n)} \div \frac{1}{10n}$$

13) 
$$\frac{3p(p+3)}{(p+5)(p+3)} \div \frac{p+7}{(p+5)(p+7)}$$

14) 
$$\frac{2x(x-10)}{x+8} \div \frac{x-10}{7(x+8)}$$

15) 
$$\frac{9}{2m^2 - 18m} \div \frac{1}{m-9}$$

16) 
$$\frac{1}{n-6} \div \frac{n-5}{10n^2 - 60n}$$

17) 
$$\frac{35x+21}{50x^3 + 30x^2} \div \frac{7x+42}{10}$$

18) 
$$\frac{15r^2 + 22r + 8}{6r^2 - 8r - 8} \div \frac{45r^2 + 36r}{18r - 36}$$

Answers to Numbers 1,2 , and 11-14 are already factored (ID: 1)

1)  $\{9, 1, -6\}$

2)  $\{3, 5, 9\}$

3)  $\frac{6m^2}{m+10}$

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

5)  $\frac{r^2}{2}$

6)  $\frac{4}{n}$

7)  $\frac{5x(x-8)}{x+9}$

8)  $-\frac{n^2}{n-10}$

9)  $\frac{k-2}{10}$

10) 1

11)  $\frac{k-4}{5}$

12)  $-10n$

13)  $3p$

14)  $14x$

15)  $\frac{9}{2m}$

16)  $\frac{10n}{n-5}$

17)  $\frac{1}{x^2(x+6)}$

18)  $\frac{1}{r}$