

Simplify the following expressions.

1. $\frac{60x^3}{12x}$

$$\boxed{\frac{5x^2}{1}}$$

2. $\frac{70ab^2c^3}{100b^3c}$

$$\boxed{\frac{7ac^2}{10b}}$$

3. $\frac{16x^4y^2z}{64xy^3z^3}$

$$\boxed{\frac{x^3}{4yz^2}}$$

4. $\frac{7x^2}{3} \cdot \frac{9}{14x}$

$$\boxed{\frac{3x}{2}}$$

5. $\frac{3x^2y}{2ab} \cdot \frac{14a^2b}{18xy^2}$

$$\boxed{\frac{7xa}{6y}}$$

6. $\frac{59n}{99} \cdot \frac{80}{33n}$

$$\boxed{\frac{4720}{3267}}$$

7. $\frac{93}{21x} \cdot \frac{34x}{51x}$

$$\boxed{\frac{62}{21}}$$

8. $\frac{6(r+2)}{20} \cdot \frac{4r}{12(r+2)}$

$$\boxed{\frac{r}{10}}$$

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

$$\boxed{\frac{x+6}{4}}$$

11. $\frac{9(x+4)}{(x+4)} \cdot \frac{9x}{9(x-5)}$

$$\boxed{\frac{9x}{x-5}}$$

12. $\frac{2(p+6)}{4} \cdot \frac{p-3}{2(p-3)}$

$$\boxed{\frac{p+6}{4}}$$

13. $\frac{x-8}{(x+6)(x-8)} \cdot \frac{6x(x+10)}{(x+10)}$

$$\boxed{\frac{6x}{x+6}}$$

14. $\frac{1}{v+10} \cdot \frac{10v+30}{v+3}$

$$\boxed{\frac{10}{v+10}}$$

15. $\frac{14n}{24n^3-64n^2} \cdot \frac{9n-24}{7n}$

$$\boxed{\frac{3}{4n^2}}$$

16. $\frac{9x^3-54x^2}{9x^2+45x} \cdot \frac{9x^2-9x}{9x^3-54x^2}$

$$\boxed{\frac{x-1}{x+5}}$$

Simplify the following expressions.

$$17. \frac{x+7}{7x+35} \cdot \frac{x^2-3x-40}{x-8}$$

$(x-8)(x-5)$
 $7(x+5)$

$$\frac{x+7}{7}$$

$$18. \frac{x+1}{3x-15} \cdot \frac{x^2+9x+18}{8x^2+24x}$$

$(x+3)(x+6)$
 $3(x-5) \quad 8x(x+3)$

$$\frac{(x+1)(x+6)}{24x(x-5)}$$

$$19. \frac{45x^2}{x-9} \cdot \frac{x^2-5x-36}{3x^2+12x^3}$$

$(x-9)(x+4)$
 $3x^2(x+4x)$

$$\frac{15(x+4)}{1+4x}$$

$$20. \frac{8x-56}{8x+48} \cdot \frac{x^2+9x+18}{8x^2+24x}$$

$8(x-7) \quad (x+3)(x+6)$
 $8(x+6) \quad 8x(x+3)$

$$\frac{x-7}{8x}$$

$$21. \frac{x^2-2x-15}{8x+20} \div \frac{2}{4x+10}$$

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

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

$$22. \frac{42x-54}{30-6x} \div \frac{18-14x}{x^2-10x+25}$$

$$\frac{6(7x-9)}{6(5-x)} \cdot \frac{(x-5)(x-5)}{2(9-7x)}$$

$$-\frac{x+5}{2}$$

$$23. \frac{x^2-16}{x-9} \div \frac{x^2+14x+40}{x^2+x-90}$$

$$\frac{(x-4)(x+4)}{(x-9)} \cdot \frac{(x+10)(x-9)}{(x+4)(x+10)}$$

$$x-4$$

$$24. \frac{10x^2+42x+36}{6x^2-2x-60} \div \frac{40x+48}{3x^2-13x+10}$$

$$\frac{2(5x+6)(x+3)}{2(3x-10)(x+3)} \cdot \frac{(3x-10)(x-1)}{8(5x+6)}$$

$$x-1$$