

Alg 2 Homework 18

$$\textcircled{1} \frac{m+1}{3m-15} \cdot \frac{8m-80}{m^2-9m-10}$$

$$= \frac{\cancel{m+1}}{3(m-5)} \cdot \frac{8(\cancel{m-10})}{(m-10)(\cancel{m+1})} = \boxed{\frac{8}{3(m-5)}} \text{ or } \frac{8}{3m-15}$$

$$\textcircled{2} \frac{3x^2-6x-9}{x^2-x-2} \cdot \frac{x^2-4}{6x+12}$$

$$= \frac{3(x^2-2x-3)}{(x-2)(x+1)} \cdot \frac{(x+2)(x-2)}{6(x+2)}$$

$$= \frac{\cancel{3}(x-3)(x+1)}{(x-2)(x+1)} \cdot \frac{(x+2)(\cancel{x-2})}{\cancel{6}(x+2)} = \boxed{\frac{x-3}{2}}$$

$$\textcircled{3} \frac{3y^2-13y+4}{3y^2+8y-3} \div \frac{12y^2-7y+1}{4y^2+11y-3}$$

$$= \frac{(3y-1)(y-4)(4y-1)(y+3)}{(3y-1)(y+3)(3y-1)(4y-1)} = \boxed{\frac{y-4}{3y-1}}$$

$$\textcircled{4} \frac{3x^2-27}{18x+30} \div \frac{x^2-7x+12}{3x^2-7x-20}$$

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

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

$$(5) \quad \frac{b}{b+4} + \frac{b+8}{b+4}$$

$$= \frac{2b+8}{b+4}$$

$$= \frac{2(b+4)}{b+4} = \boxed{2}$$

$$(6) \quad \frac{x^2+4}{3x^2+12x-36} - \frac{3x+2}{3x^2+12x-36}$$

$$= \frac{x^2-3x+2}{3x^2+12x-36}$$

$$= \frac{(x-2)(x-1)}{3(x^2+4x-12)}$$

$$= \frac{(x-2)(x-1)}{3(x-2)(x+6)} = \boxed{\frac{x-1}{3(x+6)}} \quad \text{or} \quad \frac{x-1}{3x+18}$$