

DIRECTIONS: Simplify

$$1. \frac{x+3}{5} - \frac{2x+1}{10} \quad \frac{1}{2}$$

$$2. \frac{2x+5}{4x^2} + \frac{2x-5}{10x} \quad \frac{4x^2+25}{20x^2}$$

$$3. \frac{1}{xy^3} - \frac{1}{x^3y} \quad \frac{(x+y)(x-y)}{x^3y^3}$$

$$4. \frac{1}{yz} + \frac{1}{zx} + \frac{1}{xy} \quad \frac{x+y+z}{xyz}$$

$$5. \frac{x}{x-1} - \frac{1}{x+1} \quad \frac{x^2+1}{(x+1)(x-1)}$$

$$6. \frac{1}{u^2-2u} - \frac{1}{u^2-4} \quad \frac{2}{u(u+2)(u-2)}$$

$$7. \frac{1}{p^2-2p+1} - \frac{1}{p^2+p-2} \\ \frac{3}{(p+2)(p-1)^2}$$

$$8. (x-y)^{-2} - (x+y)^{-2} \\ \frac{4xy}{(x+y)^2(x-y)^2}$$

$$9. \frac{3}{4x^2-12xy+9y^2} + \frac{1}{2xy-3y^2} \\ \frac{2x}{y(2x-3y)^2}$$

$$10. \frac{x+1}{1+\frac{1}{x}} \quad x$$

$$11. \frac{u^{-2}-v^{-2}}{u^{-1}-v^{-1}} \quad \frac{u+v}{uv}$$

$$12. \frac{h+h^{-2}}{1+h^{-1}} \quad \frac{h^2-h+1}{h}$$

$$13. \frac{\frac{2}{y+2}-1}{\frac{1}{y+2}+1} \quad -\frac{y}{y+3}$$

$$14. \frac{\frac{1}{a+1}+\frac{1}{a-1}}{\frac{1}{a+1}-\frac{1}{a-1}} \quad -a$$

$$15. \frac{1+\frac{1}{x-1}}{1+\frac{1}{x^2-1}} \quad \frac{x+1}{x}$$