

DIRECTIONS: Write in simplest form without negative or zero exponents. Assume that no denominator equals 0.

$$1. (3 \cdot 5)^{-1}$$

$$\frac{1}{15}$$

$$2. (-2^{-2})^{-1}$$

$$-4$$

$$3. 5^{-1}(3^{-2} \cdot 2^{-3})^0$$

$$\frac{1}{5}$$

$$4. \left(\frac{3}{4}\right)^{-1}\left(\frac{4}{3}\right)^{-2}$$

$$\frac{3}{4}$$

$$5. \frac{p^{-1}q^{-2}}{p^{-3}}$$

$$\frac{p^2}{q^2}$$

$$6. \frac{6xy^{-1}}{-2x^{-2}y^{-1}}$$

$$-3x^3$$

$$7. \left(\frac{2}{h^2k^{-3}}\right)^{-2}$$

$$\frac{h^4}{4k^6}$$

$$8. \frac{(3x^{-2}y)^{-1}}{(2xy^{-2})^0}$$

$$\frac{x^2}{3y}$$

$$9. 5t(s^{-1}t^{-2})^{-2}$$

$$5s^2t^5$$

$$10. \left(\frac{2pq^{-1}}{4q^2}\right)^{-1}$$

$$\frac{2q^3}{p}$$

$$11. \left(\frac{3}{t^2}\right)^{-1}\left(\frac{t}{3}\right)^{-2} \quad 3$$

DIRECTIONS: Simplify. Assume that no denominator equals 0.

$$12. \frac{5t^3}{15t^5} \quad \frac{1}{3t^2}$$

$$13. \frac{30x^2y^3}{-6x^3y^2} \quad -\frac{5y}{x}$$

$$14. \frac{48x^5y^5}{32x^4y^6} \quad \frac{3x}{2y}$$

$$15. \left(\frac{2x^2}{-y}\right)^4 \quad \frac{16x^8}{y^4}$$

$$16. \quad \frac{2u}{v^2} \cdot \frac{3u}{2v^2} = \frac{3u^2}{v^4}$$

$$17. \quad \frac{xy^2}{2} \cdot \frac{6x}{y^2} = 3x^2$$

$$18. \quad \frac{a^2b^3c}{a^3bc^2} = \frac{b^2}{ac}$$

$$19. \quad \left(\frac{2x^2}{y^3}\right)\left(\frac{-y^3}{2x^2}\right)^2 = \frac{y^3}{2x^2}$$

$$20. \quad \frac{(2hk^3)^3}{(-h^2k^2)^2} = \frac{8k^5}{h}$$

$$21. \quad \frac{(pq^2r^3)^3}{(p^3qr^2)^2} = \frac{q^4r^5}{p^3}$$

$$22. \quad \left(\frac{4x^2}{yz^2}\right)\left(\frac{z}{2x}\right)^3 = \frac{z}{2xy}$$

$$23. \quad \left(\frac{-4a^2}{3b}\right)^2 \left(\frac{-b}{2a}\right) = -\frac{8a^3}{9b}$$

$$24. \quad \frac{x^{n+1}y^n}{x^ny^{n-1}} = xy$$

$$25. \quad \frac{(z^n)^3}{z^nz^3} = z^{2n-3}$$

$$26. \quad \frac{a^{n-1}b^{2n}}{a^{n+1}(b^2)^{n-1}} = \frac{b^2}{a^2}$$