

Day 02 HW:

Review of Target 3

Name _____

Date _____

Block _____

Master E

1-12: Simplify each expression.

$$1. \frac{x^2 - 4}{(x-2)(x+1)}$$

$$\frac{(x+2)(x-2)}{(x-2)(x+1)}$$

$$\frac{x+2}{x+1}$$

$$2. \frac{8y^2(y^6)^3}{4y^{24}}$$

$$\frac{2 \cdot 4 \cdot y^2 \cdot y^{18}}{4y^{24}}$$

$$\frac{2y^{20}}{y^{24}} = \frac{2}{y^4}$$

$$3. \frac{3a^2 - 24a}{3a^2 + 12a}$$

$$\frac{3a(a-8)}{3a(a+4)}$$

$$\frac{a-8}{a+4}$$

$$4. \frac{5r^2}{r^2-4} \cdot \frac{r+2}{10r^5}$$

$$\frac{5r^2(r+2)}{(r+2)(r-2) \cdot 5 \cdot 2 \cdot r^5}$$

$$\frac{1}{2r^3(r-2)}$$

$$5. \frac{24g^3}{5f^2} \cdot \frac{10(gf)^3}{8g^5f}$$

$$\frac{8 \cdot 3 \cdot g^3 \cdot 2 \cdot f \cdot g^3 f^3}{5 f^2 \cdot 8 g^5 f}$$

$$\frac{6f^3 g^6}{f^3 g^5} = 6g$$

$$6. \frac{3x^2}{x+2} \div \frac{3x}{x^2-4}$$

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

$$x(x-2)$$

$$7. \frac{q^2+2q}{6q} \div \frac{q^2-4}{3q^2}$$

$$\frac{q(q+2)}{2 \cdot 3q} \cdot \frac{3q^2}{(q+2)(q-2)}$$

$$\frac{q^2}{2(q-2)}$$

$$8. \frac{t^2+19t+84}{4t-4} \cdot \frac{2t-2}{t^2+9t+14}$$

$$\frac{(t+7)(t+12)}{2 \cdot 4(t-1)} \cdot \frac{2(t-1)}{(t+7)(t+2)}$$

$$\frac{t+12}{2(t+2)}$$

$$9. \frac{16a^2+40a+25}{3a^2-10a-8} \div \frac{4a+5}{a^2-8a+16}$$

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

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

$$10. \frac{\frac{c^2y}{2d^2}}{\frac{-c^6}{5d}}$$

$$\frac{c^2y}{2d^2} \cdot \frac{5d}{-c^6}$$

$$\frac{5c^2dy}{-2c^6d^2} = \frac{-5y}{2c^4d}$$

$$11. \frac{\frac{a^2-b^2}{4a}}{\frac{a+b}{2a}}$$

$$\frac{(a+b)(a-b)}{4a} \cdot \frac{2a}{(a+b)}$$

$$\frac{a-b}{2}$$

$$12. \frac{\frac{x-4}{x^2+6x+9}}{\frac{x^2-2x-8}{3+x}}$$

$$\frac{(x-4)}{(x+3)(x+3)} \cdot \frac{(3+x)}{(x+1)(x+2)}$$

$$\frac{1}{(x+3)(x+2)}$$

13-15: Find the LCM of each set of polynomials.

13. $12c, 6c^2d$

$$2 \cdot 6 \cdot c \quad 6 \cdot c^2 \cdot d$$

$$12c^2d$$

14. $18a^3bc^2, 24b^2c^2$

$$2 \cdot 3 \cdot 3 \cdot a^3 \cdot b \cdot c^2 \quad 2 \cdot 2 \cdot 2 \cdot 3 \cdot b^2 \cdot c^2$$

$$72a^3b^2c^2$$

15. $x^2 - 3x - 4, x + 1$

$$(x-4)(x+1) \quad x+1$$

$$(x-4)(x+1)$$

16-24: Simplify each expression.

16. $\frac{3}{8p^2r} + \frac{5}{4p^2r} \cdot \frac{2}{2}$

$$\frac{3}{8p^2r} + \frac{10}{8p^2r}$$

$$\frac{13}{8p^2r}$$

17. $\frac{2}{a+2} + \frac{-3}{2a}$

$$\frac{2(2a)}{2a(a+2)} + \frac{-3(a+2)}{2a(a+2)}$$

$$\frac{4a - 3a - 6}{2a(a+2)}$$

$$\frac{a-6}{2a(a+2)}$$

18. $\frac{1}{x^2+2x+1} + \frac{x}{x+1}$

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

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

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

19. $\frac{4z}{z-4} + \frac{z+4}{z+1}$

$$\frac{4z(z+1)}{(z-4)(z+1)} + \frac{(z+4)(z-4)}{(z-4)(z+1)}$$

$$\frac{4z^2 + 4z + z^2 - 16}{(z-4)(z+1)}$$

$$\frac{5z^2 + 4z - 16}{(z-4)(z+1)}$$

20. $\frac{7}{4gh} + \frac{3}{4h^2}$

$$\frac{7(h)}{4gh^2} + \frac{3(g)}{4gh^2}$$

$$\frac{7h+3g}{4gh^2}$$

21. $\frac{n}{n-3} + \frac{2n+2}{n^2-2n-3}$

$$(n-3)(n+1)$$

$$\frac{n(n+1)}{(n-3)(n+1)} + \frac{2n+2}{(n-3)(n+1)}$$

$$\frac{n^2+n+2n+2}{(n-3)(n+1)}$$

$$\frac{n^2+3n+2}{(n-3)(n+1)} = \frac{(n+2)(n+1)}{(n-3)(n+1)}$$

24. $\frac{2c-7}{3} + \frac{4}{1}$

$$\frac{2c-7}{3} + \frac{12}{3}$$

$$\frac{2c-7+12}{3}$$

$$\frac{2c+5}{3}$$

$$\frac{n+2}{n-3}$$

22. $\frac{3}{y^2+y-12} + \frac{-2}{y^2+6y+8}$

$$\frac{3(y+2)}{(y+4)(y-3)(y+2)} + \frac{-2(y-3)}{(y+4)(y-3)(y+2)}$$

$$\frac{3y+6-2y+6}{(y+4)(y-3)(y+2)}$$

$$\frac{y+12}{(y+4)(y-3)(y+2)}$$

23. $\frac{k}{k-n} - \frac{k}{n-k}$

$$\frac{k}{k-n} + \frac{-k(-1)}{n-k(-1)}$$

$$\frac{k}{k-n} + \frac{k}{k-n}$$

$$\frac{2k}{k-n}$$