

DO NOW

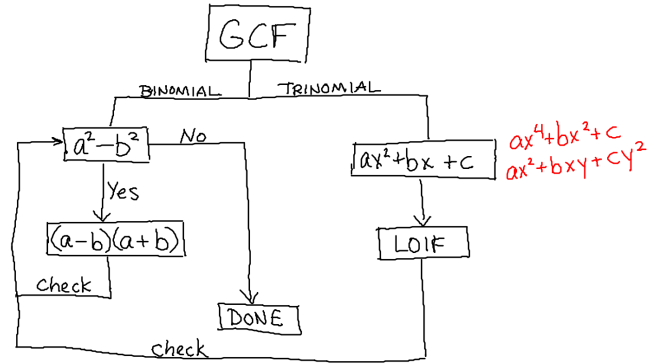
Factor:

$$1. \quad 15 + 12x$$
$$3(5 + 4x)$$

$$2. \quad x^2 - 3x - 28$$
$$(x-7)(x+4)$$

3. $x^2 - 16y^2$
 $(x+4y)(x-4y)$

7.4 Factoring Completely



Examples:

$$1. \frac{5a^2 - 5b^2}{5(a^2 - b^2)} = \frac{5(a-b)(a+b)}{5(a-b)(a+b)}$$

$$\begin{array}{l} 2. \ 12m^2 - 27n^2 \\ \quad 3(4m^2 - 9n^2) \\ \quad \underline{3(2m - 3n)(2m + 3n)} \end{array}$$

$$3. \quad 2x^2y + 7xy + 3y$$
$$y(2x^2 + 7x + 3)$$
$$y(x+3)(2x+1)$$

$$4. \quad 4r^2 - 4r - 48$$
$$4(r^2 - r - 12)$$
$$\boxed{4(r-4)(r+3)}$$

$$5. \quad y^2 - 81$$

$$(y-9)(y+9)$$

$$6. 25x^2 + 100xy + 100y^2$$
$$25(x^2 + 4xy + 4y^2)$$
$$\boxed{25(x+2y)(x+2y)}$$

$$7. \quad 4x^2 - 64$$
$$4(x^2 - 16)$$
$$4(x+4)(x-4)$$

$$\begin{aligned} 8. \quad & 3d^2 - 6d - 24 \\ & 3(d^2 - 2d - 8) \\ & \boxed{3(d-4)(d+2)} \end{aligned}$$

$$9. \ x^4 - 16$$
$$(x^2 - 4)(x^2 + 4)$$
$$(x - 2)(x + 2)(x^2 + 4)$$

$$10. \ x^4 - 3x^3 - 40x^2$$
$$x^2(x^2 - 3x - 40)$$
$$\boxed{x^2(x-8)(x+5)}$$

$$11. y^4 - 13y^2 + 36$$
$$(y^2 - 4)(y^2 - 9)$$
$$(y - 2)(y + 2)(y - 3)(y + 3)$$

HOMework

Worksheet - HW 7.4