

Factoring Day 3

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

$$(y-3)(x+2)$$

$$a(b-4) + 3(\underline{4} - \underline{b})$$

$-3(-4 + b)$

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

$$(b-4)(a-3)$$

$$pq - 2q + 2p - 4$$

$$\cancel{p}q - 2\cancel{q} + \cancel{2}p - \cancel{4}2$$

$$\cancel{q}(p-2) + \cancel{2}(p-2)$$

$$(p-2)(q+2)$$

$$ab - 2 - 2b + a$$

$$(\cancel{ab} - \cancel{2b}) + (a - 2)$$

$$\cancel{b(a-2)} + \cancel{1(a-2)}$$

$$(a-2)(b+1)$$

$$x^2 - 6x + 9 - 4y^2$$

$$(x^2 - 6x + 9) - 4y^2$$

$$(x-3)(x-3) - 4y^2$$

$$\overset{(x-3)^2}{(x-3)^2} - \overset{(2y)^2}{4y^2}$$

$$(x-3-2y)(x-3+2y)$$

$$u^2 - v^2 + 2v - 1$$
$$u^2 + (-v^2 + 2v - 1)$$

$$u^2 - (v^2 - 2v + 1)$$

$$u^2 - (v - 1)(v - 1)$$

$$u^2 - (v - 1)^2$$

$$(u - (v - 1))(u + (v - 1))$$

$$(u - v + 1)(u + v - 1)$$

$$a^6 + b^3$$
$$(a^2)^3 + (b)^3$$

$$(a^2 + b)(a^4 - (a^2)(b) + b^2)$$

$$(a^2 + b)(a^4 - a^2b + b^2)$$

$$u^2 - v^2 - 2u - 2v$$

$$(u^2 - v^2) + (-2u - 2v)$$

$$\frac{(u-v)(\cancel{u+v})}{(\cancel{u+v})} + \frac{-2(\cancel{u+v})}{(\cancel{u+v})}$$

$$(u+v)(u-v-2)$$

$$(a^2 - b^2) + (a - b)$$

$$\frac{\cancel{(a-b)}(a+b)}{\cancel{(a-b)}} + 1 \frac{\cancel{(a-b)}}{\cancel{(a-b)}}$$

$$(a-b)(a+b+1)$$

$$\begin{aligned}
 & s^3 + t^3 + s^2t + st^2 \\
 & \left(\underbrace{s^3}_{s^2} + \underbrace{s^2t}_{s^2} \right) + \left(\underbrace{t^3}_{t^2} + \underbrace{st^2}_{t^2} \right) \\
 & \frac{s^2(\cancel{s+t})}{(\cancel{s+t})} + \frac{t^2(\cancel{s+t})}{(\cancel{s+t})} \\
 & (s+t)(s^2+t^2)
 \end{aligned}$$

$$x^{2n} - 2x^n + 1$$

$$(x^n - 1)(x^n - 1)$$

$$(x^n - 1)^2$$