

Unit 8 Review

Factor each completely.

1)  $n^2 + n - 90$

Quadratic Trinomial,  $a=1 = \diamond$

$$\begin{array}{r} 10 \\ + \\ -9 \\ \hline -90 \end{array}$$

$$(n+10)(n-9)$$

2)  $2p^2 - 5p$  Binomial. Not  $\square$ . gcf.

gcf =  $p!$

$$p(2p-5)$$

3)  $15p^2 - 66p + 24$   
Quadratic  
gcf first!

Final answer

$$3(5p^2 - 22p + 8) \rightarrow 3(p-4)(5p-2)$$

acgc

(1)  $5 \cdot 8 = 40$

(3)  $(5p-20)(5p-2)$

$$\begin{array}{r} -22 \\ -20 \\ + \\ -2 \\ \hline -40 \end{array}$$

(4)  $5 \cdot 8$   
 $(p-4)(5p-2)$

4)  $14m^2 + 16m \leftarrow$  gcf!

$$2m(7m+8)$$

5)  $m^2 + 6m + 9$

$$\begin{array}{r} 6 \\ 3 \times 3 \\ + \\ 9 \\ \hline 9 \end{array}$$

$$(m+3)(m+3)$$

or

$$(m+3)^2$$

6)  $100m^2 - 64 \leftarrow$  dots, but gcf first!

$$4(\underline{25m^2 - 16})$$

dots

$\sqrt{25m^2} = 5m$

$\sqrt{16} = 4$

$$4(5m+4)(5m-4)$$

7)  $18x^2 - 2y^2$

gcf = 2

$$2(\underline{9x^2 - y^2})$$

dots

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

8)  $81a^4 - 16$

dots!

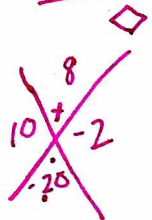
$$(9a^2+4)(\underline{9a^2-4})$$

dots

$$(9a^2+4)(3a+2)(3a-2)$$

9)  $5a^2 + 40a - 100$  *gcf first!*

$$5(a^2 + 8a - 20)$$



$$5(a+10)(a-2)$$

11)  $-14b^3 + 12b - 8$   
*gcf.*

$$2(7b^3 + 6b - 4)$$

\*not quadratic!  
can't factor further!

13)  $40yx + 32y^3$

$$8y(5x + 4y^2)$$

10)  $28x^2 - 88x + 64$

$$4(7x^2 - 22x + 16)$$

*acgc*

①  ~~$\frac{-22}{-14} \cdot -8$~~       ③  $\frac{(7x-14)(7x-8)}{7 \quad 1}$   
②  ~~$\frac{-22}{11} \cdot -8$~~       ④  $(x-2)(7x-8)$

$$4(x-2)(7x-8)$$

12)  $-24x^3 - 30x^2 + 24x$

~~gcf:  $-6x^2$~~

*gcf:  $6x$*   
 $6x(-4x^2 - 5x + 4)$

~~$6x(-4x^2 - 5x + 4)$~~

~~$6x(-4x^2 - 5x + 4)$~~



Not factorable!

14)  $-32u^3v^5 + 48u^2v^3 - 80uv^2 + 8$

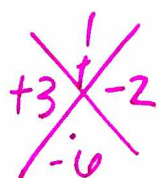
*gcf*

$$8(-4v^3v^5 + 6u^2v^3 - 10uv^2 + 1)$$

15) The Area of a rectangle is  $5x^2 + 5x - 30$  if the width is  $5x + 15$ , what is the length?

*gcf:  $5(x^2 + x - 6)$*

$$= 5(x+3)(x-2)$$



$5(x+3)$   
 $(5x+15) \quad (x-2)$   
 $\uparrow \quad \quad \uparrow$   
 $W \quad \quad L$

$$L = x - 2$$