

Assignment 2.2.1  
day 2

Name \_\_\_\_\_

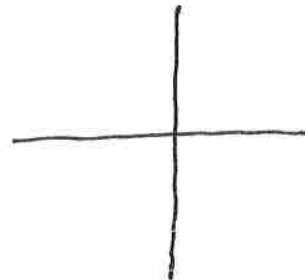
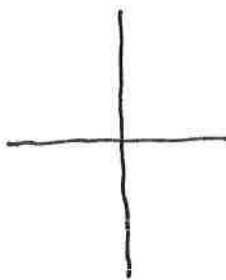
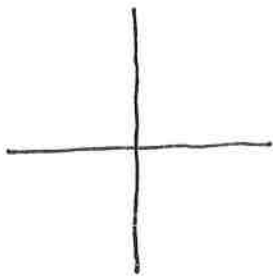
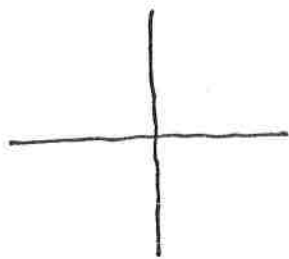
① Without a GDC, sketch each function (remember to identify the parent first)

$$y = \sqrt{x+4}$$

$$y = (x-5)^3$$

$$y = -\sqrt{x-2} - 3$$

$$y = \frac{1}{5}\left(\frac{1}{x}\right) + 3$$



② Find both the y-int and x-int algebraically of  $y = (x-3)^2 - 1$

③ Complete the square to convert to graphing form (try, if you want, to do so without the box)

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

④ Complete the square to convert to graphing form

$$y = 2x^2 - 16x + 30$$

# 5 Factoring Binomials

Factor each binomial equation (using the Difference of Squares Shortcut)

Example:  $9x^2 - 4 = (3x + 2)(3x - 2)$

1.  $4x^2 - 1 =$

2.  $x^2 - 9 =$

3.  $36x^2 - 9 =$

4.  $100x^2 - 81 =$

5.  $25x^2 - 4 =$

6.  $81x^2 - 121 =$

7.  $x^2 - 16 =$

8.  $144x^2 - 16 =$

9.  $x^2 - 25 =$

10.  $625 - 16x^2 =$

11.  $100 - x^2 =$

12.  $x^2 - 36 =$

13.  $121x^2 - 49 =$

14.  $49x^2 - 16 =$

→ Cross out the correct answers below. Use the remaining letters to complete the statement.

$(x+13)(x-13)$ THE	$16(3x-1)(3x-1)$ SUM	$(x-4)(x+4)$ OFA	$(6x+5)(6x-5)$ PRO	$(25-4x)(25+4x)$ QUO	$(x+1)(x-1)$ DUC
$(9+x)(9-x)$ TOF	$9(2x-1)(2x+1)$ TIE	$(x+7)(x-7)$ THE	$(2x+1)(2x-1)$ NTA	$(9x+1)(9x-1)$ SUM	$(x+2)(x-2)$ AND
$(10-x)(10+x)$ WAS	$(5x+3)(5x-3)$ DIF	$(x-5)(x+5)$ HAS	$(8x+1)(8x-1)$ FER	$(11x-7)(11x+7)$ MAN	$(x-6)(x+6)$ NER
$(x+18)(x-18)$ ENC	$(10x-9)(10x+9)$ THA	$(x-3)(x+3)$ TIS	$(5x-2)(5x+2)$ MYP	$(7x+11)(7x-11)$ EOF	$(x+8)(x-8)$ THE
$(x+15)(x-15)$ SQU	$(9x-11)(9x+11)$ ROB	$(x+9)(x-9)$ ARE	$(3x+2)(3x-2)$ ROO	$(7x-4)(7x+4)$ LEM	$(x+9)(x-9)$ TS.

15. The factored form of the difference of the two squares is

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⑥ Algebraically find the <sup>exact</sup>  $x$ -intercept for  $f(x) = \frac{\sqrt{x+4}}{3} - 2$

Now find the exact  $x$ -intercept(s) for  $f(x) = \frac{\sqrt{x+4}}{3} - 2$

⑦ challenge. solve the system of linear equations. Exact answers.  
(FYI, they are not friendly)

$$2x - 4y = 4$$

$$3x + 5y = 3$$