Practice Test 1 (Test 1 Review)  $\left(3x+5\right)^2=5$ #1 By the Square Root Property:  $(3x+5)^2 = \pm \sqrt{5}$  $3x + 5 = \pm \sqrt{5}$ 3x = ± 15 - 5 (Subtract 5 from both sides) 3x = -5 ± 15 (Rewrite)  $x = \frac{-5 \pm \sqrt{5}}{3}$  (Divide by 3) Solution set:  $\left\{\frac{-5+15}{3}, \frac{-5-15}{3}\right\}$ Am: B **#2**  $4x^2 = -6x - 1$  $4x^{2} + 6x + 1 = 0$  (RHS = 0) a = 4; b = 6; c = 1.Quadratic Formula: -b ± 1 b² - 4ac Za  $x = \frac{-6 \pm \sqrt{(6)^2 - 4(4)(1)}}{2(4)} = \frac{-6 \pm \sqrt{36 - 16}}{8}$ Z(4)

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$$x = \frac{-6 \pm \sqrt{20}}{8} = \frac{-6 \pm \sqrt{4} \cdot \sqrt{5}}{8}$$

$$x = \frac{-6 \pm 2\sqrt{5}}{8} = \frac{2(-3 \pm \sqrt{5})}{8/4}$$

$$x = \frac{-3 \pm \sqrt{5}}{4}$$

$$x = \frac{-3 \pm \sqrt{5}}{4}$$

$$Solution net: \left\{ \frac{-3 + \sqrt{5}}{4}; \frac{-3 - \sqrt{5}}{4} \right\}$$

$$Aws: D$$

$$(#3)$$

$$4x^{2} + 52 = 0 \implies 4x^{2} = -52$$

$$\Rightarrow x^{2} = \frac{-52}{4} \implies x^{2} = -13$$

$$\Rightarrow x = \pm \sqrt{-13} = \pm \sqrt{1^{2} \cdot 13} \quad (Reull:1^{2} = -1)$$

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$$\Rightarrow x = \pm \sqrt{13} = 50 \times 48 = 0 \quad (Make RHS = 0)$$

$$x^{2} (5x + 3) = 16(5x + 3) = 0 \quad (Factor hy grouping)$$

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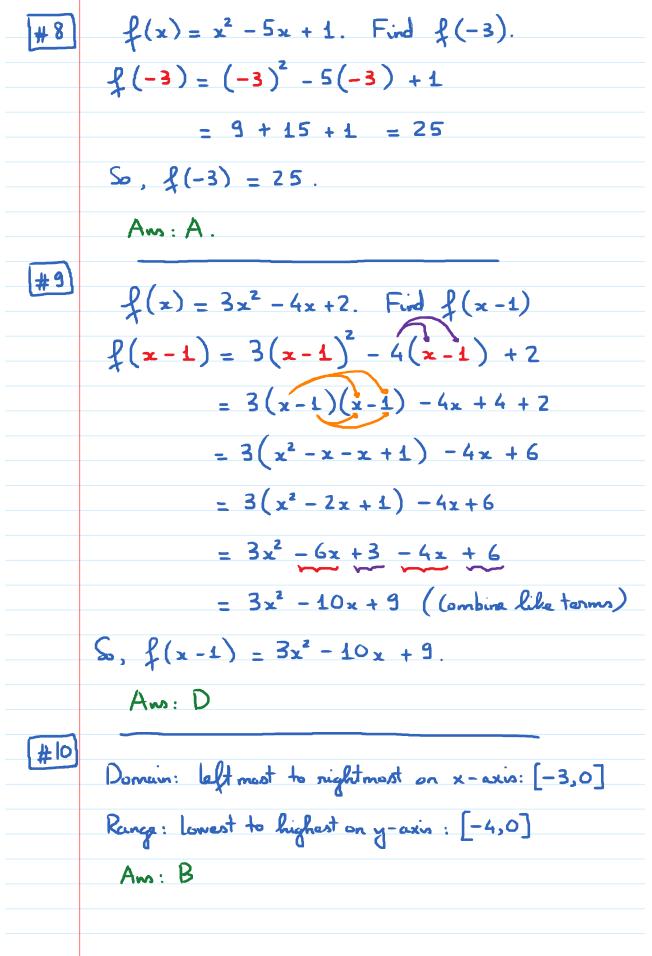
$$(5x+3)(x^{2}-16)=0 (Further and the commonfurther 5x+3)
5x+3=0 or  $x^{2}-16=0$  (set each further = 0)  
 $x^{2} = 16$   
 $x = -\frac{3}{5}$ ;  $x = \pm \sqrt{16} = \pm 4$   
Solution Net:  $\left\{-\frac{3}{5}, -4, 4\right\}$   
Ann: C  

$$(18x+20) = x^{2}$$
(N8x+20 =  $x^{2}$   
 $(18x+20)^{2} = x^{2}$  (Square both sides)  
 $8x+20 = x^{2}$   
 $0 = x^{2} - 8x - 20$   
 $0 = (x - 10)(x + 2)$  (Farther)  
 $x - 10 = 0$  or  $x + 2 = 0$   
 $x = 10$ ;  $x = -2$ .  
(Inech rolution:  
For  $x = 10$   $\sqrt{8(10) + 20} = 10$   
The a solution  $\sqrt{100} = 10$  True.  
For  $x = -2$ :  $\sqrt{8(-2)+20} = -2 \longrightarrow \sqrt{4} = -2$   
Pot a solution  $2$  False.$$

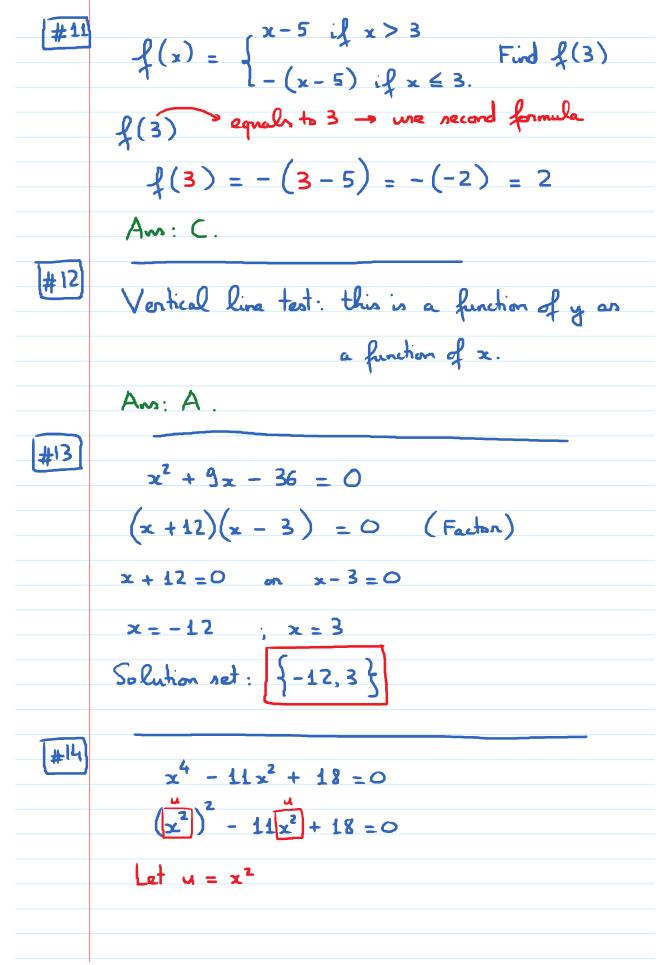
Thursday, September 19, 2019  $(3x - 7)^2 - 4(3x - 7) - 12 = 0$ #6 Let u= 3x -7 Revnite the equation in u:  $u^2 - 4u - 12 = 0$ (u + 2)(u - 6) = 0u = -2; u = 6To solve for x : plug in u = 3x - 7. For y = -2:  $-2 = 3x - 7 \longrightarrow 5 = 3x \rightarrow x = \frac{5}{3}$ For u = 6:  $6 = 3x - 7 \rightarrow 13 = 3x \rightarrow x = \frac{13}{3}$ Solution set:  $\left\{ \frac{5}{3}, \frac{13}{3} \right\}$ Am: A. #7  $\{(-3,-8); (3,6); (5,-5); (7,-6); (10,6)\}$ This is a function because none of the first components is repeated. Am: B

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| #17 | $3x^4 - 300x^2 = 0$                                    |
|     | $3x^2(x^2-100)=0$ (Factor out $3x^2$ )                 |
|     | $3x^2 = 0$ or $x^2 - 100 = 0$ (Set each factor<br>= 0) |
|     | $x^2 = \frac{0}{3} = 0$ $x^2 = 100$                    |
|     | $x = 0$ $x = \pm 100 = \pm 10$                         |
|     | Solution set: $\{0, -10, 10\}$                         |
|     |  |
| #18 | $\sqrt{20x-20} = x+4$                                  |
|     | •  |
|     | $(120x - 20) = (x + 4)^2$ (Square both rides)          |
|     | 20x - 20 = (x + 4)(x + 4)                              |
|     | $20x - 20 = x^2 + 4x + 4x + 16$                        |
|     | $20x - 20 = x^2 + 8x + 16$                             |
|     | $0 = x^{2} + 8x + 16 - 20x + 20$                       |
|     | $0 = x^2 - 12x + 36$                                   |
|     | 0 = (x - 6)(x - 6)                                     |
|     | $S_{0}, x - 6 = 0, S_{0}, x = 6$                       |
|     | Check solution: 20(6)-20 = 6+4                         |
|     | So, Solution set: [6]                                  |
|     |  |