

Unit 4 Test pgs 510-512 (chapter 8,9)

Multiple choice 1-9 (30 min)

fill in blank 10-12 (10 min)

written response 13-17 (25 min)

1. C (shown as a solution)
2. C (both parabolic)
3. B (has to work for both equations)
4. B (GDC)
5. D (it's on the boundary line)
6. D (<, and dotted)
7. A (>, and solid)
8. B (GDC)
9. A (worked it out)

10. 5 (3 = a - 2)

11.  $2x^2 - 10x + 12 = 0$

$x^2 - 5x + 6 = 0$

$(x-3)(x-2)$

(3,3) (2,2) a is 3

12.  $-5t^2 + 5t + 4 > 4$

$-5t^2 + 5t > 0$

$-5t(t-1)$

$\begin{array}{c} + & - \\ | & | \\ 0 & 1 \end{array}$  (0,1)  $\therefore$  1 second

13a)  $2x = \frac{1}{4}x^2 + \frac{3}{2}x$

$8x = x^2 + 6x$

$0 = x^2 - 2x$

$0 = x(x-2)$

$x=0$   $x=2$

(0,0) (2,4)



b) where putt starts the "hole" (where putt ends)

14.  $g(x): y = ax^2 + bx + c$   
 $(2, -3) \quad -3 = 4a + 2b + c$   
 $(7, 12) \quad 12 = 49a + 7b + c$

$f(x) \quad a = 1$   
 $\therefore g(x) \quad a = -1$

$-3 = -4 + 2b + c$   
 $12 = -49 + 7b + c$

$1 = 2b + c$   
 $61 = 7b + c$   
 $\underline{-60 = -5b}$

$b = 12 \quad 2(12) + c = 1$   
 $c = -23$

$g(x) = -x^2 + 12x - 23$   
 vertex  $(6, 13)$   
 $g(x) = -(x-6)^2 + 13$

15.  $4x^2 + 8x + 4 = y$

$3x^2 - 2x - 5 = y \quad \therefore 4x^2 + 8x + 4 = 3x^2 - 2x - 5$

$x^2 + 10x + 9 = 0$   
 $(x+9)(x+1) = 0$   
 $x = -9 \quad x = -1$

~~0, 0~~  $(-9, 256) \quad (-1, 0)$

16a)  $3x^2 - 5x - 10 > 2$   
 $3x^2 - 5x - 8 > 0$   
 $\uparrow$   
 error

$3x^2 - 5x - 12 > 0$   
 $(3x+4)(x-3) > 0$

$\begin{array}{c} + \quad - \quad + \\ | \quad | \quad | \\ -\frac{4}{3} \quad 3 \end{array}$

$x < -\frac{4}{3} \text{ or } x > 3$

$(-\infty, -\frac{4}{3}) \cup (3, \infty)$

b) BDC

17.  $h = -4.9t^2 + 10.4t$   
 $h = +(-4.9t + 10.4)$   
 $\downarrow \quad \downarrow$   
 $0 \quad \frac{10.4}{4.9}$   
 $0, \frac{10.4}{4.9}$

$\begin{array}{c} + \quad + \\ | \quad | \\ 0 \quad \frac{104}{49} \end{array}$   
 $(0, \frac{104}{49})$

\* this is above ground

$\frac{104}{49}$  seconds  
 Hilary  
 2.12 seconds

$$17. \quad -4.9t^2 + 10.4t > 3$$

$$-4.9t^2 + 10.4t - 3 > 0$$

$$\text{GDC} \quad (0.34, 1.78)$$

$\therefore$  1.44 seconds.