**Chapter 3 TEST**

NON-Calculator Part

**Multiple Choice [6]**

**\_\_\_\_ 1.** What is the *y*-intercepts of$ y=(x-6)(x-9)$?

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | 6  | **C** | 54 |
| **B** | 9 | **D** | -15 |

**\_\_\_\_ 2.** What is the vertex of **?

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | (5, 4) | **C** | (–5, 4) |
| **B** | (–4, 5) | **D** | (7, –4) |

**\_\_\_\_ 3.** What are the coordinates of the vertex of the quadratic function ?

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | (–6, –1) | **C** | (–1, –6) |
| **B** | (8, –2) | **D** | (8, –6) |

**\_\_\_\_ 4.** Which function is *not* quadratic?

|  |  |  |  |
| --- | --- | --- | --- |
| **A** |  | **C** |  |
| **B** |  | **D** |  |

**\_\_\_\_ 5.** What is the function ** written in standard/general form?

|  |  |  |  |
| --- | --- | --- | --- |
| **A** |  | **C** |  |
| **B** |  | **D** |  |

**\_\_\_\_ 6.** What is the axis of symmetry for the quadratic function **?

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | *x* =  | **C** | *x* =  |
| **B** | *x* =  | **D** | *x* =  |

**Completion [7]**

 **7.** A quadratic function with vertex (0, 1) and two *x*-intercepts will open \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 **8.** The quadratic function in vertex form that represents the graph shown below is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .



 **9.** The easiest form to determine the y-intercept is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ form.

 **10.** The vertex form of $y=3x^{2}-6x-22$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **11.** The fully factored form of $-4x^{2}+24x-36$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **12.** The fully factored form of $30x^{2}+5x-5$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Short Answer**

 **13. a)** Sketch the graph of the function $y=-x^{2}-2x+15$ . Label the vertex and the *y*-intercept. [2]



  **b)** Determine the *x*-intercepts graphically. [1]

Calculator Part

 **14.** A baseball batter hits an infield fly ball. The height, *h*, in metres, of the baseball after *t* seconds is approximately modelled by the function *h*(*t*) = –5*t*2 + 4*t* + 1. [4]

**a)** State the domain and range of the function.

**b)** At what height was the ball when the batter hit it?

**c)** How high (max) is the ball going to go?

**15.** A cat is jumping to catch a fly from a table to the floor. The table is 1m tall.
 The cat reaches a maximum height of 1m40 above the floor.
 He reaches that height when he is 1m from the table (horizontal distance).
 Determine an equation that models the height of the cat as a function of his distance from the table.