

Assessment – Quadratic Functions
Name: _____

K/U	/26	APP.	/14	TIPS	/5	COMM.	/7
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Knowledge/Understanding

1. For each of the following relations, state the domain, range and whether or not it is a function. (3 marks each = 6 marks)

a) D:

b) D:

R:

R:

Function: Yes or No

Function: Yes or No

2. Use a difference table to determine whether the following relations are linear, quadratic, or neither. (2 marks each = 4 marks)

a)

x	y	1st	2nd
-2	8		
-1	2		
0	0		
1	2		
2	8		

b)

x	y	1st	2nd
-2	0.25		
-1	0.5		
0	1		
1	2		
2	4		

7. A football is thrown into the air. The height, $h(t)$, of the ball, in meters, after t seconds is modeled by $h(t) = -2(t - 1)^2 + 6$

a) What is the maximum height of the ball? (1 mark)

b) How high off the ground was the ball when it was thrown? (3 marks)

c) How high was the ball at 2 seconds? (2 marks)

d) When does the ball hit the ground? (2 marks)

e) How long is the ball in the air above 1 m? (2 marks)

TIPS

8. The height, h , in meters, of an object t seconds after it is dropped is $h = -0.5gt^2 + k$, where g is the acceleration due to gravity and k is the height from which the object is released from a height of 400m, how much longer does it take to fall to a height of 70 m on the Moon compared with falling to the same height on Earth? The acceleration due to gravity is 9.8 m/s^2 on Earth and 1.6m/s^2 on the Moon. (5 marks)

Communication

9. Describe the transformations of the graph of $y = x^2$ to obtain $y = 4 (x - 5)^2 + 5$ (3 marks)
10. Write the equation of a parabola that opens down, is vertically compressed by factor $\frac{3}{4}$, is shifted 6 units left and 4 units down. (4 marks)