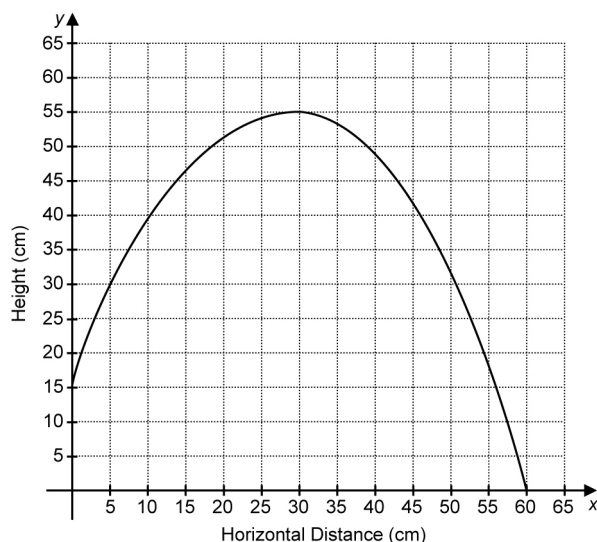Name: _____   Date: _____

Chapter 8 Practice Test

Multiple Choice

1. The graph shows the height of a basketball over time after it was thrown in the air

What was the maximum height reached by the basketball?

A 3 m	**B** 5 m
C 1 m	**D** 4 m

2. The table shows the height and horizontal distance of a soccer ball after it was kicked.

Horizontal Distance (m)	Height (m)
0	0
2	2
4	4
6	2
8	0

What horizontal distance had the ball travelled when it reached its maximum height?

A 2 m	**B** 4 m
C 6 m	**D** 8 m

3. What are the zeros of the quadratic relation $y = (x + 5)(x - 4)$?

A 5, −4	**B** −5, 4
C −5, −4	**D** 5, 4

4. What are the zeros of the quadratic relation $y = x^2 + 7x - 8$?

A 8, −1	**B** −8, −1
C 8, 1	**D** −8, 1

5. Which parabola does NOT open upward?

A $y = x^2 - 9x + 8$	**B** $y = x^2 - 2x - 8$
C $y = x^2 - 64$	**D** $y = -x^2 - 64$

6. What is the y-intercept of the quadratic relation $y = x^2 - 15x + 48$?

A −15	**B** 15
C − 48	**D** 48

7. The path of a paper airplane can be modelled by the relation $h = -4t^2 + 16$, where h represents the height in centimetres of the airplane above the ground and t represents time in seconds. From what height was the airplane thrown?

A 2 cm	**B** 4 cm
C 8 cm	**D** 16 cm

Name: _____   Date: _____

Short Responses

8. The table shows the height and horizontal distance of a baseball after it was hit.

Horizontal Distance (m)	Height (m)
0	0
2	2.5
4	3.5
6	2.5
8	0

a) Use a graphing calculator to graph the data. Sketch the graph.
b) Find the equation of the curve of best fit.
c) Determine the horizontal distance travelled by the ball when it reached its maximum height.

9. The table shows the height of a motorcycle over time as it moves across a bridge.

Time (s)	Height (m)
0	0
10	3
20	5
30	7
40	5

a) Use a graphing calculator to graph the data.
b) Find the equation of the curve of best fit.
c) What is the maximum height of the bridge?
d) How long does it take the motorcyclist to reach the highest point?

10. Find the zeros of each relation, without graphing.
a) $y = (x + 7)(x - 2)$
b) $y = (x - 6)(x + 5)$
c) $y = x^2 + 12x + 32$
d) $y = x^2 - 15x + 54$

11. Consider the relation $y = x^2 - 13x + 42$.
a) Does the relation have a maximum or a minimum value? Explain.
b) Identify the y-intercept.
c) Identify the zeros of the relation.

Extended Response

12. The daily expenses at a candy store can be modelled by the relation $C = 2t^2 - 12t + 16$, where C represents the total cost in dollars, and t represents the time in hours that the store is open.
a) What is the minimum cost of running the store each day?
b) What is the number of hours the store is open for this minimum cost?
c) What is the cost per day when the store is not open for business?

13. A skydiver parachuted from an airplane. Her path can be modelled by the relation $h = -20t^2 + 2000$, where h represents the skydiver's height in metres above the ground, and t represents time in seconds.
a) From what height did the skydiver jump out of the plane?
b) How long did it take her to reach the ground?

14. A hockey team sells tickets for $50. The team owners want to increase revenues, so they increase prices. They know that ticket sales decrease by 500 tickets every time the price is increased by $5.00. This situation can be modelled by the relation $R = -100m^2 + 2000m + 20\ 000$, where R represents revenue in dollars and m represents the number of times the price is increased by 5.00.
a) Determine the maximum revenue.
b) How many times does the ticket price have to be increased to reach the maximum revenue?
c) What is the price of a ticket when revenue is maximized?