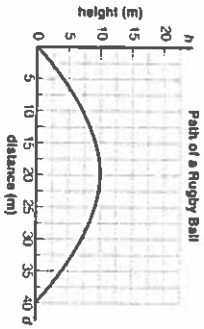


Practise: Interpret Quadratic Relations

Date: _____

1. The graph shows the path that a rugby ball followed after it was kicked. The y-axis represents the height of the ball in metres while the x-axis represents the horizontal position of the ball in metres.

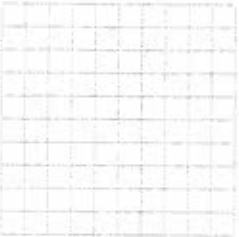


- What was the maximum height reached by the ball? _____
- At what horizontal distance did the ball reach its maximum height? _____
- How far did the ball travel before it hit the ground? _____
- If the kicker was 32 m out from the cross bar of a goal post, would the ball pass over the cross bar if it is 3 m off of the ground? _____
- What is the farthest distance the ball can be kicked and still pass over the 3 m cross bar? _____

Section 8.1

2. The quadratic relation $h = -5t^2 + 210$ describes the path of a rock that falls from the top of a cliff, with h representing the height in metres and t representing the time in seconds.
 $h = -5t^2 + 210$

t (s)	h (m)
0	
1	
2	
3	
4	
5	
6	



- What is the height of the cliff? _____
- How long will it take the rock to reach the bottom of the cliff?
Round your answer to the nearest tenth of a second. _____
- How far from the bottom of the cliff is the rock when half of the time has passed? _____

3. The table shows the curve of a clothes line that hangs between two poles 35 m apart.

Horizontal Distance from First Pole (m)	0	5	10	15	20	25	30	35
Height of Line Above Ground (m)	2.14	1.77	1.52	1.49	1.46	1.51	1.73	2.12

- Use a graphing calculator to plot the data.
- Find the equation that models the curve of the clothes line.
- Answer to the nearest tenth of a metre. How far from the ground is the lowest point? _____

- At what horizontal distance does it occur? _____
- d) How far from each end could a person 1.6 m tall stand so their head just touches the line? _____

4. Describe two methods that can be used to determine if a relation is quadratic.

5. A harbour ferry service has 240 000 riders per month who pay a fare of \$2. The fare is to increase in the new year. Previous fare increases have shown that for every \$0.10 increase in the fare, the number of riders will drop by 10 000.

Fare (\$)	Riders	Total Revenue (\$)
2.00	240 000	480 000
2.10		
2.20		
2.30		
2.40		
2.50		
2.60		

- Plot revenue versus fare using a graphing calculator.
- What fare price would generate the most revenue? _____
- What total revenue would this generate? _____

Section 8.1

Date: _____