## FENCING THE FREEWAY...

To reduce the number of animals killed on the freeway, a fencing company has been asked to fence some sections of the freeway.

The company knows that they need 1 post for every 2 metres of fencing with an additional post at the end. So a fence 4 metres long will require 3 posts.


For each question show all your working and explain your answer in as much detail as possible.
a. How many posts will be needed for a 12 metre fence?
b. How many posts will be needed for a 116 metre fence?
c. A fence uses 85 posts. How long is the fence?
d. The free-way builders asked the fencing company to build a rectangular yard for their vehicles. They wanted the area of the yard to be 48 square metres. What options might the fencing company consider? Which one do you think they would choose and why?

## SCORING RUBRIC

| FENCING THE FREEWAY |  |  |
| :---: | :---: | :---: |
| TASK: | RESPONSE: | SCORE |
| a. | No response or incorrect | 0 |
|  | Correct (7 posts), but little/no working or explanation to support conclusion | 1 |
|  | Correct (7 posts), working and/or explanation clearly supports conclusion, eg, drawing and/or explanation given in terms of pattern, divide by 2 and add 1 | 2 |
| b. | No response or incorrect | 0 |
|  | Correct (59 posts), but little/no working or explanation to support conclusion | 1 |
|  | Correct (59 posts), working and/or explanation clearly supports conclusion, eg, response indicates use of pattern, divide by 2 and add 1 | 2 |
| c. | No response or incorrect | 0 |
|  | Correct (168 metres), but little/no working or explanation to support conclusion | 1 |
|  | Correct (168 metres), working and/or explanation clearly supports conclusion, eg, response indicates use of pattern, subtract 1 multiply by 2 | 2 |
| d. | No response or incorrect | 0 |
|  | At least one correct option, but little/no working or explanation to support conclusion, eg, " 8 metres long and 6 metres wide because it's the best", | 1 |
|  | One or more correct options with working and/or explanation to support conclusion, eg, " 4 metres long by 12 metres long, because it would fit beside the freeway and the trucks could park one behind the other" | 2 |
|  | Two or more correct options (eg, $24 \mathrm{~m} \times 2 \mathrm{~m}, 12 \mathrm{~m} \times 4 \mathrm{~m}, 8 \mathrm{~m} \times 6 \mathrm{~m}$, ...), working and/or explanation clearly supports conclusion, eg, "8 metres by 6 metres as this would give them more room to move the vehicles" | 3 |

