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| Communication in all questions must include:

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| --- | --- |
| * Enough steps shown to clearly demonstrate thinking
* Solutions that are neat and easy to follow
* Proper use of mathematical symbols
* Equal signs aligned
 | * Units used as required
* Concluding statements for all word problems
* Fractions reduced to lowest terms
* Correct rounding.
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**2D Geometry**

1. Find the area and perimeter of each shape:

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| --- |
| http://s2.hubimg.com/u/6844119_f260.jpg |
| http://www.mathsteacher.com.au/year10/ch14_measurement/11_composite_figures/Image5343.gif |
|  |
| http://www.mathsteacher.com.au/year8/ch12_area/09_comp/Image15583.gif |

**3D Geometry:** Find the surface area and volume of each figure:

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| --- |
| http://images.tutorvista.com/cms/images/67/volume-of-cylinder-example.png |
| Image |
| Image |
|  |
| https://dr282zn36sxxg.cloudfront.net/datastreams/f-d%3A785d99ca4718a564e6a6afac3b92f5c4616e7b7c1442e675ce93930f%2BIMAGE%2BIMAGE.1\*Slant = 57 ft. long |

1. The three rectangles shown all have the same perimeter. Which has the largest area? Explain in words how you made your choice.
2. A rectangular room needs to have an area of 60 m2. What are the dimensions of the room with a minimum perimeter, and what is the perimeter?
3. You need to build a rectangular enclosure in your backyard. You buy some prebuilt sections of fencing which are each 0.25m long. You buy a total of 40m of fencing. Determine the dimensions (length and width) which will maximize the area of your enclosure
4. 36 m of rope are available to create a rectangular swimming area, using the beach as one side. What is the maximum area that can be produced?
5. A marine biologist is collecting data. She has 100 m of rope with buoys to outline a rectangular or circular research area on the surface of the water. Which figure will enclose a greater area? Justify your answer by showing all calculations.
6. A rectangular-based prism must have a surface area of 96 cm2. What are the dimensions of the prism that produce the maximum volume, and what is the volume?
7. A rectangular-based prism has a volume of 50 in3. Determine the minimum surface area.