

<b>CHAPTER 16</b>	<b>Surface Area to Volume Ratio Worksheet Answer Key</b>	<b>BLM 16.1.2A</b>
<b>ANSWER KEY</b>		

1. Answers appear in **bold**.

Dimensions of Cell	Surface Area	Volume	Surface Area to Volume Ratio
1 mm × 1 mm × 1 mm	6 mm <sup>2</sup>	1 mm <sup>3</sup>	<b>6:1</b>
2 mm × 2 mm × 2 mm	<b>24 mm<sup>2</sup></b>	8 mm <sup>3</sup>	3:1
3 mm × 3 mm × 3 mm	54 mm <sup>2</sup>	<b>27 mm<sup>3</sup></b>	<b>2:1</b>
5 mm × 5 mm × 5 mm	<b>150 mm<sup>2</sup></b>	<b>125 mm<sup>3</sup></b>	<b>1.2:1</b>
2 mm × 3 mm × 4 mm	<b>52 mm<sup>2</sup></b>	<b>24 mm<sup>3</sup></b>	2.2:1

2. a) True  
 b) False. As a cell grows in size, the volume of its cytoplasm increases at a faster rate than the surface area of its plasma membrane.  
 c) True  
 d) False. A cell must stop growing once it reaches a certain size.