

## DIRECTED NUMBERS-SET-1

1

The temperature decreases from 25 °C to 22 °C.  
Calculate the percentage decrease.

*Answer* ..... % [2]

MS-1

**(-)**12

**2**

**M1** for  $\frac{-22+25}{25} \times 100\%$  oe

**2**

2

The table gives the average surface temperature (°C) on the following planets.

Planet	Earth	Mercury	Neptune	Pluto	Saturn	Uranus
Average temperature	15	350	-220	-240	-180	-200

**(a)** Calculate the range of these temperatures.

*Answer(a)* ..... °C [1]

**(b)** Which planet has a temperature 20 °C lower than that of Uranus?

*Answer(b)* ..... [1]

MS-2

**(a)** (-)590

**1**

**(b)** Neptune

**1**

3

During one week in April, in Quebec, the daily minimum temperatures were

-5°C,      -1°C,      3°C,      2°C,      -2°C,      0°C,      6°C.

Write down

**(a)** the lowest of these temperatures,

*Answer(a)* ..... °C [1]

**(b)** the range of these temperatures.

*Answer(b)* ..... °C [1]

MS-3	(a) -5	1	
	(b) 11	1	
4	<p>One January day in Munich, the temperature at noon was <math>3^{\circ}\text{C}</math>. At midnight the temperature was <math>-8^{\circ}\text{C}</math>.</p> <p>Write down the difference between these two temperatures.</p> <p style="text-align: right;"><i>Answer</i> ..... <math>^{\circ}\text{C}</math> [1]</p>		
MS-4	(a) 1.32656...	1	
	(b) 1.327	1ft	
5	<p>In March 2011, the average temperature in Kiev was <math>3^{\circ}\text{C}</math>. In March 2012, the average temperature in Kiev was <math>19^{\circ}\text{C}</math> lower than in March 2011.</p> <p>Write down the average temperature in Kiev in March 2012.</p> <p style="text-align: right;"><i>Answer</i> ..... <math>^{\circ}\text{C}</math> [1]</p>		
MS-5	- 16	1	
6	<p>At noon the temperature was <math>4^{\circ}\text{C}</math>. At midnight the temperature was <math>-5.5^{\circ}\text{C}</math>.</p> <p>Work out the difference in temperature between noon and midnight.</p> <p style="text-align: right;"><i>Answer</i> ..... <math>^{\circ}\text{C}</math> [1]</p>		
MS-6	9.5	1	

7

The table shows the temperatures in five places at 10 am one day in January.

Place	Temperature (°C)
Helsinki	-7
Chicago	-10
London	3
Moscow	-4
Bangkok	26

(a) Which place was the coldest?

..... [1]

(b) At 2 pm the temperature in Helsinki had increased by 4°C.

Write down the temperature in Helsinki at 2 pm.

.....°C [1]

MS-7

(a)	Chicago	1	
(b)	-3	1	

8

One day in Chamonix the temperature at noon was 6°C.  
At midnight the temperature was 11°C lower.

Write down the temperature at midnight.

.....°C [1]

MS-8

	-5	1	
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9	<p>The table shows the maximum daily temperatures during one week in Punta Arenas.</p> <table border="1"> <tr> <td>Monday</td> <td>Tuesday</td> <td>Wednesday</td> <td>Thursday</td> <td>Friday</td> <td>Saturday</td> <td>Sunday</td> </tr> <tr> <td>2°C</td> <td>3°C</td> <td>1°C</td> <td>2.5°C</td> <td>-1.5°C</td> <td>1°C</td> <td>2°C</td> </tr> </table> <p>(a) By how many degrees did the maximum temperature change between Thursday and Friday?</p> <p style="text-align: right;"><i>Answer (a)</i> ..... [1]</p> <p>(b) What is the difference between the greatest and the least of these temperatures?</p> <p style="text-align: right;"><i>Answer (b)</i> ..... [1]</p>	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	2°C	3°C	1°C	2.5°C	-1.5°C	1°C	2°C
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday									
2°C	3°C	1°C	2.5°C	-1.5°C	1°C	2°C									
MS-9	<table border="1"> <tr> <td>(a) 4</td> <td>1</td> <td>Allow - 4</td> </tr> <tr> <td>(b) 4.5</td> <td>1</td> <td>Allow - 4.5</td> </tr> </table>	(a) 4	1	Allow - 4	(b) 4.5	1	Allow - 4.5								
(a) 4	1	Allow - 4													
(b) 4.5	1	Allow - 4.5													
10	<p>The altitude of Death Valley is -86 metres. The altitude of Mount Whitney is 4418 metres. Calculate the difference between these two altitudes.</p> <p style="text-align: right;"><i>Answer</i> ..... m [1]</p>														
MS-10	<table border="1"> <tr> <td>(-)4504</td> <td>1</td> <td>Allow (-)4500</td> </tr> </table>	(-)4504	1	Allow (-)4500											
(-)4504	1	Allow (-)4500													

<p>11</p>	<p>In Vienna, the mid-day temperatures, in °C, are recorded during a week in December. This information is shown below.</p> <p style="text-align: center;">-2   2   1   -3   -1   -2   0</p> <p>Calculate</p> <p>(a) the difference between the highest temperature and the lowest temperature,</p> <p style="text-align: right;"><i>Answer(a)</i> ..... °C [1]</p> <p>(b) the mean temperature.</p> <p style="text-align: right;"><i>Answer(b)</i> ..... °C [2]</p>		
<p>MS-11</p>	<p>(a) 5 or -5</p> <p>(b) -0.714 (-0.7143 to -0.7142) or <math>-\frac{5}{7}</math></p>	<p><b>1</b></p> <p><b>2</b></p>	<p><b>M1</b> for <math>-2 + 2 + 1 - 3 - 1 - 2</math> and <math>\div 7</math></p>