Positive / Negative Integers

1. Carry out the following additions or subtractions

(a) $-2 + 5$          (b) $-4 - 7$          (c) $12 - 17$          (d) $-6 + 18$         (e) $-5 - 5$

(f) $-3 + 17$         (g) $12 - 22$        (h) $10 - 23$           (i) $-2 + 17$         (j) $-20 + 50$

(k) $6 + (-5)$         (l) $-4 + (-2)$      (m) $-10 + (-60)$    (n) $-14 - 34$       (o) $-6 - 24$

(p) $-12 + (-12)$  (q) $-16 + (-22)$   (r) $-4 + 3 - 6$       (s) $-12 + 10 + 5 - 11$

2. (a) At an oasis in the desert the temperature was recorded at $34^0 \text{C}$ at midday. By midnight the temperature had fallen to $-3^0 \text{C}$.
   By how many degrees had the temperature fallen between midday and midnight?

(b) By 4a.m. the temperature had fallen by another $4^0 \text{C}$.
   What was the temperature at 4a.m.?

3. (a) In January the average daily temperatures in Australia and Antarctica are

   Australia       $28^0 \text{C}$
   Antarctica      $-3^0 \text{C}$

   What is the difference between these temperatures?

(b) By August the average daily temperature in Antarctica has fallen by $25^0 \text{C}$.
   What is the average daily temperature in Antarctica in August?

4. In the country of Lithuania the average temperature varies greatly between summer and winter. The average summer temperature is $52^0 \text{Fahrenheit}$ and the average winter temperature is $-15^0 \text{Fahrenheit}$.
   Calculate the difference between the average summer and winter temperatures.

5. The diagram shows a spinner. The arrow is spun round to land on one of the numbers shown.
   Find 3 numbers the arrow could land on which would add up to 4.
6. The diagrams below show a series of number lines. Write down how far apart each pair of numbers is.

(a) 14  (b) 22  (c) -7  (d) 21  (e) -35

7. The table below shows the temperatures at 10am in 5 different cities.

<table>
<thead>
<tr>
<th>City</th>
<th>Temperature(°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>-7</td>
</tr>
<tr>
<td>New York</td>
<td>-13</td>
</tr>
<tr>
<td>Anchorage</td>
<td>-24</td>
</tr>
<tr>
<td>Cairo</td>
<td>42</td>
</tr>
<tr>
<td>Capetown</td>
<td>26</td>
</tr>
</tbody>
</table>

(a) What is the difference between the temperatures in Capetown and London?
(b) What is the difference in temperatures between New York and Cairo?
(c) By midnight the temperature in Anchorage had fallen by 14°C, what was the temperature in Anchorage at midnight?

8. The diagram opposite shows tunnels in a mine and how far below the surface they are.

(a) How far below the surface is tunnel 3?
(b) How much further down is tunnel 2 than tunnel 1?
(c) Tunnel 5 is to be dug 18 m below Tunnel 3. How deep will tunnel 5 be below the surface?
9. Neil, Jim and Sarah are playing a game where they draw four cards. Their score is found by adding the numbers on their cards.

(a) Find Neil’s total score.
(b) The winner of the game is the person with the highest score.

Who wins the game?

<table>
<thead>
<tr>
<th>Neil</th>
<th>-6</th>
<th>4</th>
<th>-9</th>
<th>-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim</td>
<td>3</td>
<td>-7</td>
<td>8</td>
<td>-5</td>
</tr>
<tr>
<td>Sarah</td>
<td>-8</td>
<td>-2</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

10. In a computer game points are given or taken away for hitting different symbols. The points are shown below for each symbol.

![Symbols and Points]

- 5 points
- 8 points
- -10 points
- -6 points
- 2 points

Work out the total score for hitting the following symbols.

(a)  
(b)  
(c)  
(d)  

11. Carry out the following multiplications or divisions

(a) $-2 \times 5$  
(b) $-6 \times -6$  
(c) $12 \div -4$  
(d) $-30 \div 6$  
(e) $-8^2$

(f) $-10 \times (-2)$  
(g) $60 \div (-10)$  
(h) $-5^2$  
(i) $35 \div -7$  
(j) $-12 \times (-3)$

(k) $(-40) \div (-8)$  
(l) $-2^3$  
(m) $-54 \div -9$  
(n) $-6 \times -2$  
(o) $-50 \times -3$

(p) $-5 \times 9 \times -2$  
(q) $-16 \div 4 \times -3$  
(r) $-20 \times -2 \div (-8)$

12. Use the values in question 10 to work out

(a)  
(b)  

![Multiplication and Division with Symbols]