STUDENT SURVEY

Proportional Reasoning

Name: _____________________________________________________

School: ____________________________________________________

Grade: _____________________________________________________

On the following pages you will find 11 questions.

Please answer the questions in the spaces provided.

Your reasoning is just as important as the answers you obtain so be sure to explain your thinking in as much detail as you can.

You may not use a calculator.
1. First, can you work out 25% of 40 out in your head? Yes ☐ No ☐

Write down your answer:

Now, show or explain how you worked out your answer:

2. Look at the grid below. Look for **pairs** of numbers that add up to 1.0. [Each number can only be used once.]

<table>
<thead>
<tr>
<th>0.5</th>
<th>0.25</th>
<th>0.07</th>
<th>0.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>0.01</td>
<td>0.75</td>
<td>0.03</td>
</tr>
<tr>
<td>0.3</td>
<td>0.007</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>0.13</td>
<td>0.8</td>
<td>0.013</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Write answers here:
3. "4 ÷ 0.5"

First, can you work out 4 ÷ 0.5 in your head? Yes ☐ No ☐

Write down your answer:

Now, show or explain how you worked out your answer:

4. Circle the 2 fractions that are closest to 1 whole

\[
\begin{array}{cccccccc}
\frac{1}{4} & \frac{7}{10} & \frac{2}{3} & \frac{5}{6} & \frac{3}{4} & \frac{3}{5} & \frac{3}{13} & \frac{1}{8}
\end{array}
\]

Why did you choose these?
5.
Paul and Helen both receive pocket money. Paul spends $\frac{1}{3}$ of his, and Helen spends $\frac{2}{3}$ of hers.

A) Is it possible for Paul to have spent more than Helen?

B) Why do you think this? Explain.

6.
The following information is from a survey about smoking and lung disease among 250 people.

<table>
<thead>
<tr>
<th></th>
<th>Lung disease</th>
<th>No lung disease</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>90</td>
<td>60</td>
<td>150</td>
</tr>
<tr>
<td>No smoking</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100</td>
<td>250</td>
</tr>
</tbody>
</table>

Using this information, do you think that for this sample of people lung disease depended on smoking? Explain your answer.
7.

A)

First, can you work out 250 divided by 5 in your head?  Yes ☐  No ☐

Write down your answer:

Now, show or explain how you worked out your answer:

B)

First, can you work out 250 divided by 50 in your head?  Yes ☐  No ☐

Write down your answer:

Now, show or explain how you worked out your answer:
8. 

First, can you work out $3 \times \frac{2}{3}$ in your head? Yes ☐ No ☐

Write down your answer:

Now, show or explain how you worked out your answer:

9. 

First, can you work this out in your head? 
Write down your answer:

Now, show or explain how you worked out your answer:
10. Which of the 4 lines (a, b, c, OR d) orders the numbers from smallest to largest? Circle your answer.

a) 0.345 0.19 0.8 1/5
b) 0.19 1/5 0.345 0.8
c) 0.8 0.19 1/5 0.345
d) 1/5 0.8 0.345 0.19

Now show or explain why you chose that one:

11. Write down any number between:
   A. 4000 and 5000 _________________________________
   B. 4100 and 4200 _________________________________
   C. 0.4 and 0.5 _________________________________
   D. How many different numbers is it possible to write down that lie between 0.41 and 0.42?

Thank You