Year 6 Reasoning Quiz 4

Algebra

1. \( n = 24 \)
   What is \( 3n - 15 \)?

2. \( 28 - 3t = 10 \)
   Work out the value of \( t \).
   \[ t = \]

3. Each shape represents a number.

   \[ \square \quad \square \quad \square \quad \text{Total 45} \]

   \[ \square \quad \triangle \quad \triangle \quad \square \quad \text{Total 42} \]

   Work out the value of each shape.

   \[ \square = \]

   \[ \triangle = \]

4. A plumber charges the following for any work done.

   call-out charge = £15
   hourly rate = £21

   Write a formula to explain what the plumber will charge for any number of hours work.
5. Draw the hands on this clock to show the time on this digital clock.

6. A film is 132 minutes long. It starts at 14:50. What time will it finish?

7. This clock is 17 minutes slow. What is the correct time?
Money

8. 5 apples cost £1.45.

3 apples and 2 bananas cost £1.13.

What is the cost of one banana? Show your method.


A pack of 4 rubbers costs 48p.

How much more does one pencil cost than one rubber? Show your method.
10. Robert buys 4 packets of crisps.

He pays with a £5 note. This is his change.

What is the cost of one packet of crisps? Show your method.

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11. On the grid, draw a triangle with the same area as this rectangle.
12. Calculate the perimeter of this rectilinear shape.

![Diagram of a rectilinear shape with measurements: 12m, 7m, 19m, 8m, and 13m.]

\[
\text{perimeter} = \ \text{[Blank]} \text{m}
\]

**Measurement**

13. A pack of 8 apples weighs 1kg. What is the mean mass of each apple?

\[
\text{mass of 1 apple} = \frac{1\text{kg}}{8} = \frac{1}{8}\text{kg} = \frac{100}{8}\text{g}
\]

Mark on the jug how much milk will be left in the jug.

![Measuring jug with milk levels](image)

15. Measure the diagonal of this rectangle.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>57</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>$t = 6$</td>
</tr>
</tbody>
</table>
| **3** | $\square = 15$  
$\triangle = 6$ |
| **4** | Cost = number of hours $\times £21 + £15$  
call out |
| **5** |   |
| **6** | 17:02 |
| **7** | 2:07 |
| **8** | 13p |
| **9** | 8p |
| **10** | 69p |
| **11** | any triangle with an area of $24\text{cm}^2$. |
| **12** | 68m |
| **13** | 125g |
| **14** | 65ml, marked quarter of way between 60 and 80 |
| **15** | 10.8cm |