Step 1 Understanding the Problem

From the question and diagram,

- Number of boxes on weighing scale = $\square$
- Length of weighing scale needle = $\square$
- Mass of five boxes = $\square$
- Total mass measured on the scale = $\square$
- $\pi = \frac{22}{7}$

Question (a):

Step 2 Devising a plan

- Determine the $\square$ by using the ratio of mass of $\square$ to total mass measured on the scale.
- Then, using the angle, calculate the $\square$ by using the formula:

  Area of sector = $\frac{\square}{\square} \times \pi \times \square^2$

Step 3 Carrying out the plan

Angle subtended by the needle = $\frac{\square}{\square} \times 360°$

$= \square°$

Area of sector subtended by the needle = $\frac{\square}{\square} \times \square \times \square^2$

$= \square \text{ cm}^2$

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Question (b):

Step 2 Devising a plan

- Determine the angle formed by eight boxes:
  - Calculate the mass of $\square$
  - Calculate the mass of $\square$
  - Determine the angle subtended by using the ratio of $\square$ to 6 kg.
- Determine the $\square$ formed using the angle obtained and the formula:

Length of arc = $\frac{\square}{\square} \times \square$

Step 3 Carrying out the plan

Mass of one box = $\square \div \square$

= $\square$ kg

Mass of eight boxes = $8 \times \square$

= $\square$ kg

Angle subtended by the needle = $\frac{\square}{\square} \times 360°$

= $\square$ °

Minor arc length formed = $\frac{\square}{\square} \times 2 \times \square \times \square$

= $\square$ cm

Step 4 Look back and Reflect

Have you rechecked all your calculation? ……

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