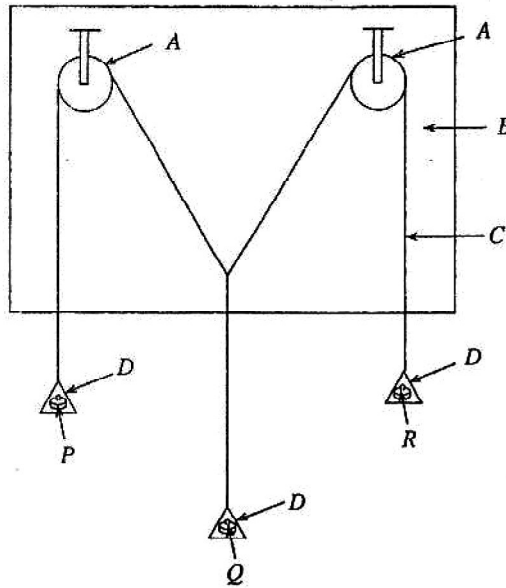


Figure shows a set-up used in a school laboratory to verify the principle of parallelogram of forces.



- A - smooth small pulleys
- B - vertical drawing board with a white paper pinned on
- C - light string
- D - light scale pans

P, Q, and R - weights

(a) Give a list of other items needed to carry out this experiment accurately.

.....

.....

(b) How do you test whether the friction of the pulleys is negligible?

.....

.....

(c) If the above arrangement is set-up for you, briefly state the steps that you would adopt to verify the principle of parallelogram of forces.

1. ....
2. ....
3. ....
4. ....
5. ....

(d) In order to carry out this experiment light strings should be used. What is the reason for this?

.....

(e) After completing the parallelogram correctly, a student noticed that the direction of the relevant diagonal was not exactly vertical. Give a reason for this.

.....

(f) If the scale pans are not light what should you do in order to carry out the experiment correctly?

.....

.....

(g) This set-up is used by a student to find the weight of a stone. The relevant sides of the force parallelogram are shown in the figure. Evaluate the weight of the stone ( $1 \text{ cm} = 2 \text{ N}$ ).

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