

is not the middle point, and in same way any other point but F may be shewn not to be the middle point. $\therefore F$ is the middle point.

10. Join DF , through B draw BG parallel to FD , meeting CD produced in G . Join FG . Then $\triangle FCG$ is required $\triangle c$. For $\triangle BFD = \triangle FDG$, add $\triangle FCD$ to each. $\therefore \&c$.

11. Common deduction follows immediately after dropping $a \perp r$ on the remaining side by *Euc. Bk. II. Props. 12 and 13.*

NATURAL PHILOSOPHY SOLUTIONS.

1. Constructing a \triangle whose sides are parallel to the three given forces (weight, reaction of plane and tension), we find that these sides are as $\sqrt{3} : 1 : 1$, i.e.,

$\frac{100}{\sqrt{3}} : T : R$
 $100 : 1 : 1$
 $\therefore T$ and R can be found.

2. The centre of gravity is at distances of $4\frac{1}{2}$ and $5\frac{1}{2}$ from the supports. Take moments about one of the supports, we have

$150 \times 4\frac{1}{2} = 10 \times P$, or $P = 67\frac{1}{2}$; \therefore the pressure on the other $= 82\frac{1}{2}$.

3. If w be weight of plank and a and b distances of centre of gravity from bench, we have $200b = a \times w$. $120(b+2) = (a-2)w$. $60(b+4) = (a-4)w$, or $w = 360$ lbs.

4. For force exerted by the horse in pounds
 $\frac{1250 \times 18}{150} = 150$.

5. Height of tube $= 15$ 30 in., area of base of vessel $= 15$ 9 sq. in; \therefore pressure on bottom

of vessel in ozs. $= 15 \times \frac{9 \times 30}{1728} \times 1000 = 156\frac{1}{4}$.

weight of water $= 15$ pressure on table $= 27$ c. in. in tube + 27 c. in. in vessel; \therefore pressure

on table in ozs. $= \frac{54}{1728} \times 1000 = 31\frac{1}{4}$.

6. Let x = height of atmosphere in ft.; pressure of air on sq. ft. in ozs. $= 1.2916 \times x$. And pressure of column of mercury 30 in. in

height, on sq. ft. $= \frac{30}{12} \times 13.596 \times 1000$ ozs.,

and therefore $1.2916x = \frac{30}{12} \times 13.596 \times 1000$,
 or $x = 26.316$ ft.

TEACHERS' ASSOCIATIONS.

CHRONICLE OF THE MONTH.

WEST HURON TEACHERS' ASSOCIATION.
 —The above Association of Teachers held their regular half-yearly meeting in the Central School, Exeter, on Friday and Saturday, January 24th and 25th. The attendance was large and the greatest interest and enthusiasm were manifested throughout the meeting. A considerable portion of the time was taken up by Dr. McLellan, who gave many useful hints and much valuable instruction on the method of Teaching, Reading, Arithmetic and Algebra. In Algebra, particularly, his unique method of factoring, and his short and simple solutions

of difficult problems were much admired. On the evening of Friday he delivered his popular lecture on "The Future of Canada," to a large and highly appreciative audience.

Inspector Miller, as representative to the Provincial Association, gave an interesting and detailed report of the last meeting of that body, after which he took up the subject of military drill in connection with school work, pointing out the many benefits arising from a regular course of calisthenics and physical training. The subject was made practical by the teachers adjourning to a large vacant room and going through a