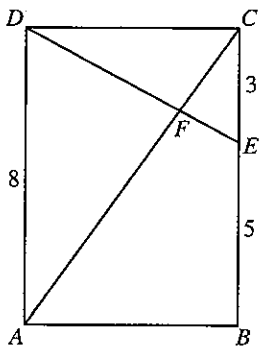
18. In the diagram, $ABCD$ is a rectangle, DE and AC intersect at F, $AD = 8$ cm, $CE = 3$ cm and $EB = 5$ cm.



(a) Find the following ratios.

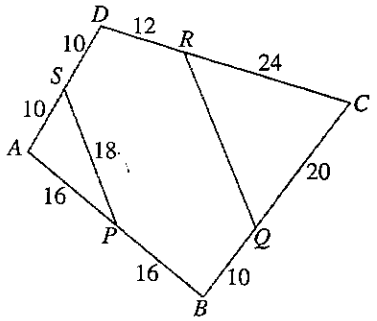
(i) $AF : CF$

(ii) Area of $\triangle AFD$: Area of $\triangle CFD$

(iii) Area of $\triangle AFD$: Area of $\triangle CFE$

(b) If the area of the rectangle $ABCD$ is 48 cm^2, find the area of $\triangle CFE$.

19.

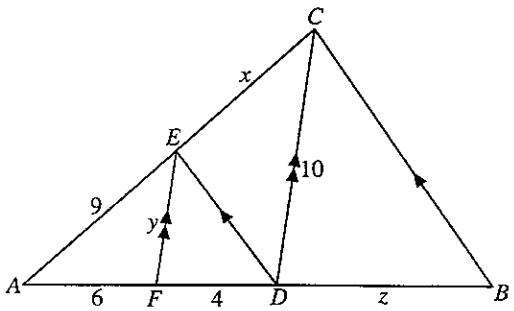


In the diagram, $AP = PB = 16$ cm, $AS = SD = BQ = 10$ cm, $CQ = 20$ cm, $CR = 24$ cm, $RD = 12$ cm and $PS = 18$ cm.

(a) Find the length of RQ.

(b) If the area of $\triangle APS = x$ cm^2 and the area of $\triangle CQR = y$ cm^2, express the area of the hexagon $BQRDSP$ in terms of x and y.

20.



In the diagram, AEC and $AFDB$ are straight lines. It is given that BC // DE, DC // FE, $AE = 9$ cm, $AF = 6$ cm, $FD = 4$ cm, $CD = 10$ cm, $CE = x$ cm, $EF = y$ cm and $BD = z$ cm.

(a) Find the values of x, y and z.

(b) If the area of $\triangle ADE = 30$ cm^2, find the area of

(i) $\triangle AEF$,

(ii) $\triangle CDE$,

(iii) trapezium $BCED$.