...MOHAMMAD BAYEZID BEG

Welcome to the world of Beautiful Geometry! This problem book is a true gem for anyone seeking to deepen their understanding of geometry. This book features 1 to 30 unique problems that will engage and challenge readers of all levels.

Whether you're a student preparing for competitive exams, a teacher seeking new teaching tools, or a geometry enthusiast looking to sharpen your skills, this book is sure to capture your imagination.

While some problems can be solved with coordinate geometry, I encourage students to tackle each problem using synthetic method. This will not only strengthen your understanding of geometry but also provide a more elegant and insightful solution.I also encourage students to give your answers in exact form as given in the book.

But Beautiful Geometry is more than just a problem book. It is a continuous work that will be updated with new problems in future versions, so be sure to stay updated and keep exploring the enchanting world of geometry.

From the visually captivating diagrams to the cleverly crafted problems, every page of this book is infused with charm and elegance. Each problem is carefully crafted to be both intellectually stimulating and visually captivating, creating a charming experience that will leave you wanting more.

And don't worry, soon I would publish a solution book! so you can check your answers and explore the solutions in detail.

Finally I would also like to extend a special thanks to Tam Link for his invaluable advice and to Mehedi Hasan for his technical assistance in bringing this charming book to life.

So what are you waiting for? Step into the world of Beautiful Geometry and prepare to be captivated by the fascinating and charming world of geometry.
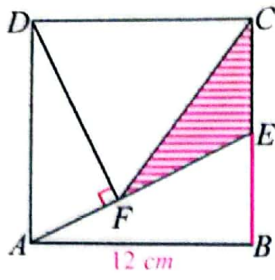
$Q\ 01:\ \square ABCD$ is a square, $\overline{DE} = \overline{EC}$, and $\square AGFE$ is a rectangle, find $\overline{HI}/\overline{IG}$.
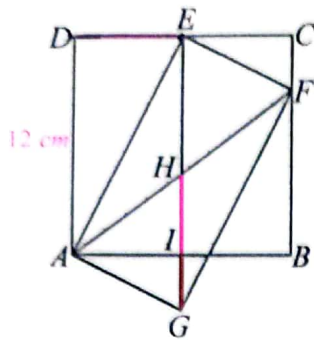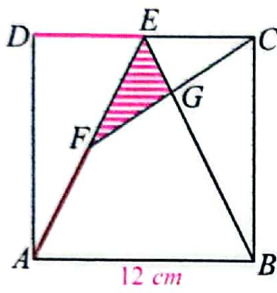

$Q\ 02:\ \square ABCD$ is a square, $\overline{DE} = \overline{EC}$, $\overline{AF} = \overline{FE}$, and $\overline{FG} = \overline{GC}$, find the area $a\triangle ABGF$.
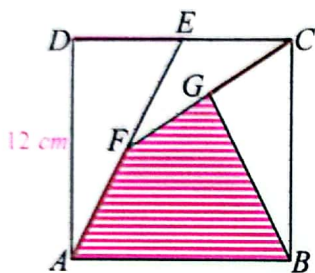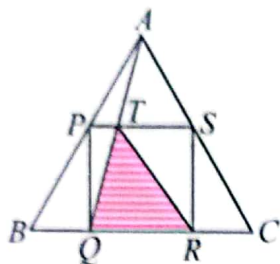
$Q\ 03:\square ABCD$ is a square, $\overline{BE}=\overline{EC}$, $\overline{DF}\perp\overline{AE}$, find the area $a\triangle CFE$.
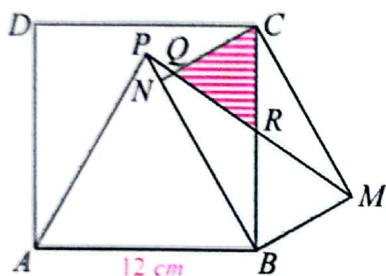

$Q\ 04:\square ABCD$ is a square, $\overline{DE}=\overline{EC}$, and $\overline{AF}=\overline{FE}$, find the area $a\triangle EFG$.
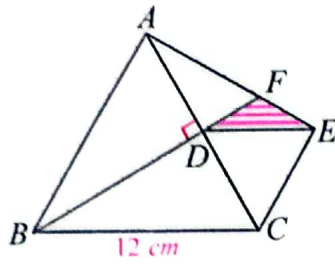
Q 05 : $\triangle ABC$ is an equilateral triangle with side length $6\,cm$, and $\square PQRS$ is a square, find the area $a\triangle QRT$.
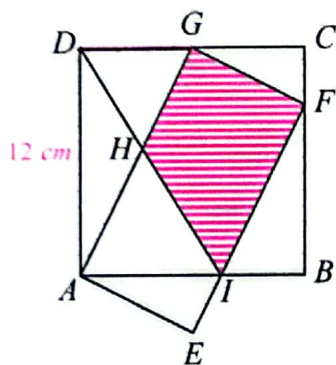

Q 06 : $\square ABCD$ is a square with side length $12\,cm$, $\triangle ABP$ is an equilateral triangle, and $\square BMCN$ is a rectangle, find the area $a\triangle CQR$.
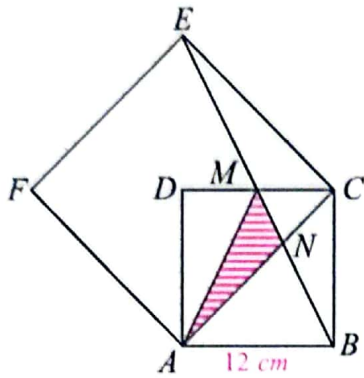
Q 07: $\triangle ABC$ is a equilateral triangle with side length $12\ cm$, $\overline{BD} \perp \overline{AC}$, and $\triangle DCE$ is also a equilateral triangle, find the area $a\triangle DEF$.
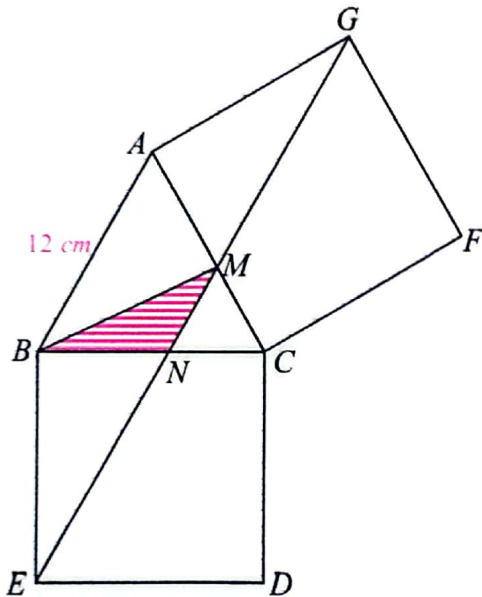

Q 08: $\square ABCD$ is a square with side length $12\ cm$, $\overline{DG} = \overline{GC}$, and $\square AEFG$ is a rectangle, find the area $a\angle FGHI$.
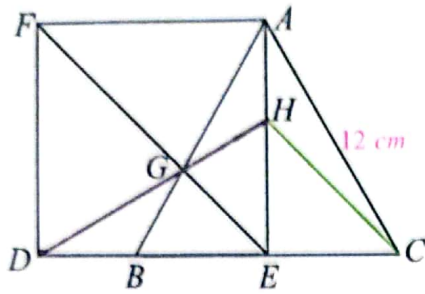
Q 09: □$ABCD$ is a square with side length $12\ cm$, and □$ACEF$ is also a square, find the area

a△AMN.
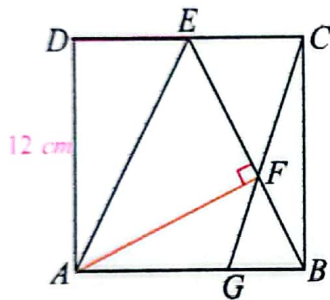

Q 10: △ABC is an equilateral triangle with side length $12\ cm$, □$BCDE$ and □$ACFG$ are two
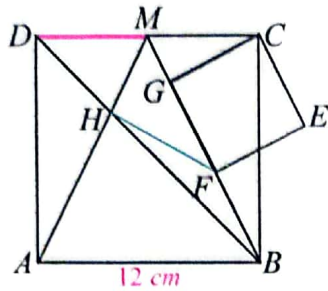
squares, find the area a△BMN.

$Q\,11:$ $\square DEAF$ is a square, and $\triangle ABC$ is an equilateral triangle with side length $12\ cm$, find the length $\overline{HC}$.
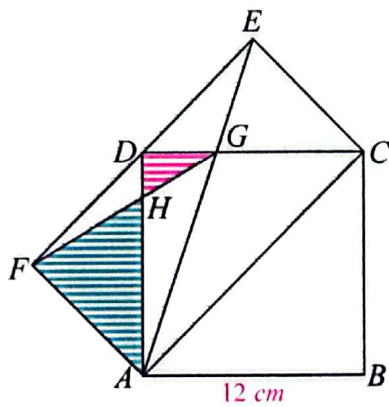

$Q\,12:$ $\square ABCD$ is a square with side length $12\ cm$, $\overline{DE}=\overline{EC}$ and $\overline{AF}\perp\overline{BE}$, find the ratio $\overline{AG}/\overline{GB}$.
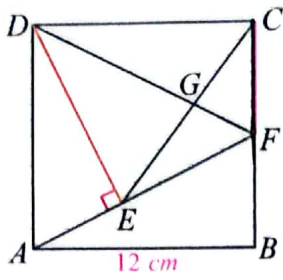
$Q\ 13:\square ABCD$ is a square with side length $12\ cm$, and $\square CEFG$ is also a square, find the length $\overline{HF}$.
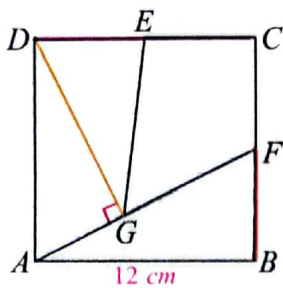

$Q\ 14:\square ABCD$ is a square with side length $12\ cm$, and $\square ACEF$ is a rectangle, find the ratio $a\triangle FAH/a\triangle HGD$.
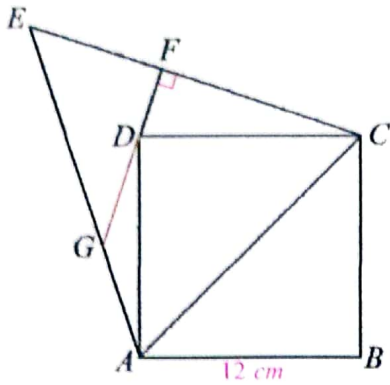
Q 15: $\square ABCD$ is a square with side length $12\ cm$, and $\overline{BF} = \overline{FC}$, find the ratio $\overline{DG}/\overline{GF}$.
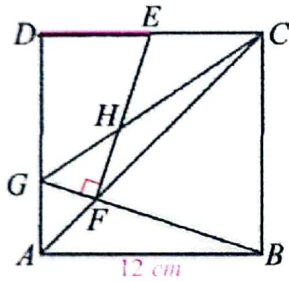

Q 16: $\square ABCD$ is a square with side length $12\ cm$, $\overline{DE} = \overline{EC}$, $\overline{BF} = \overline{FC}$, and $\overline{DG} \perp \overline{AF}$, find the angle $\angle EGF$.
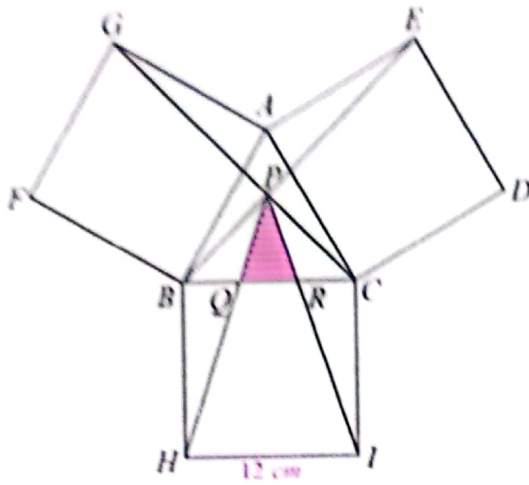
$Q\,17:\,\square ABCD$ is a square with side length $12\,cm$, $\triangle ACE$ is an equilateral triangle, and $\overline{GF}\perp\overline{EC}$, find the length $\overline{DG}$.
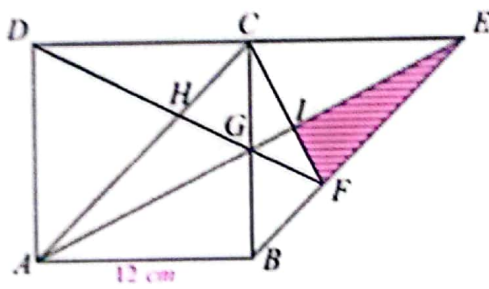

$Q\,18:\,\square ABCD$ is a square with side length $12\,cm$, $\overline{DE}=\overline{EC}$, and $\overline{EF}\perp\overline{GB}$, find the two ratios $\overline{CH}/\overline{GH}$ & $\overline{EH}/\overline{FH}$.
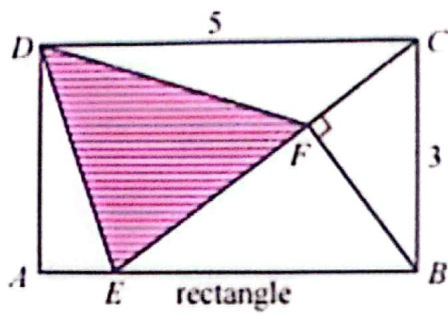
Q 19: $\triangle ABC$ is an equilateral triangle with side length $12\ cm$, and $\square ACDE$, $\square ABFG$, $\square BHIC$ are three squares, find the area $a\triangle PQR$.
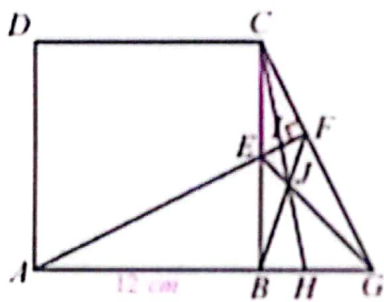

Q 20: $\square ABCD$ is a square with side length $12\ cm$, and $\square ABEC$ is a parallelogram, find the area. $a\triangle EIF$.
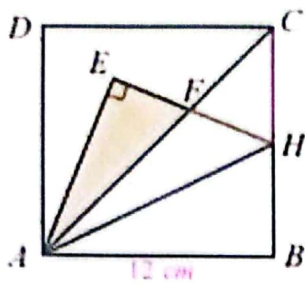
Q 21. *ΔABC* is a rectangle with side lengths 5 *cm* & 3 *cm*, $\overline{CE} = \overline{CD}$, and $\overline{BF} \perp \overline{EC}$, find the area *aΔDEF*
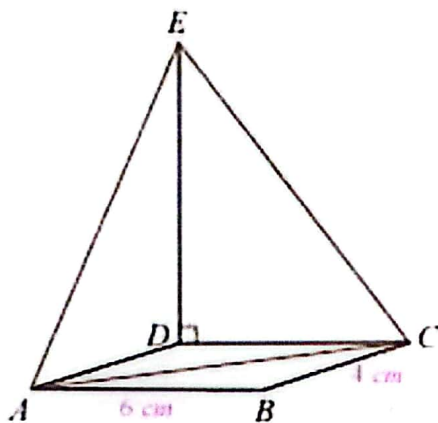

Q 22. □*ABCD* is a square with side length 12 *cm*, $\overline{CE} = \overline{EB}$, and $\overline{CG} \perp \overline{AF}$, find the ratio $\overline{BH}/\overline{GH}$
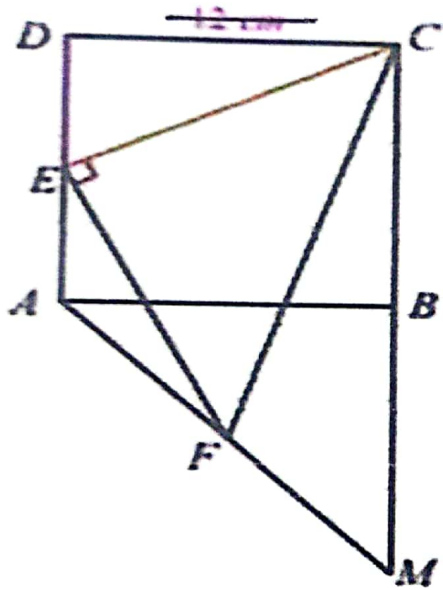
Q 25 □*ABCD* is a square with side length 12 *cm*, $\overline{BH} = \overline{HC}$, $\overline{EF} = \overline{FH}$, and $\overline{AE} \perp \overline{EH}$, find the area $a\triangle AEF$
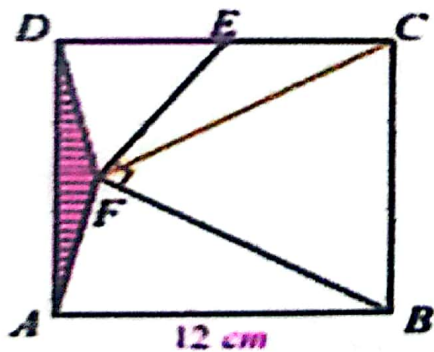

Q 26 □*ABCD* is a parallelogram with side lengths 6 *cm* & 4 *cm*, $\triangle ACE$ is an equilateral triangle, and $\overline{ED} \perp \overline{DC}$, find the area $a\square ABCD$.
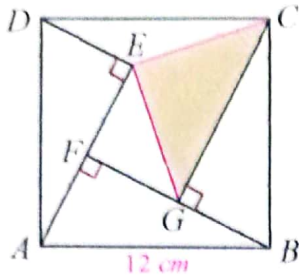
Q 23: $\square ABCD$ is a square with side length 12 cm, and $\overline{DE} = \overline{EA}$, $\overline{CE} = \overline{EF}$. prove that $\overline{BM} = \overline{BC}$.

Q 24: $\square ABCD$ is a square with side length 12 cm, $\overline{DE} = \overline{EC}$, $\overline{CF} = \overline{BF}$, and $\overline{EF} \perp \overline{BF}$. find the area $a\triangle ADF$.

Q 27: $\square ABCD$ is a square with side length $12\ cm$, $\overline{AE} \perp \overline{DE}$, $\overline{BF} \perp \overline{AE}$, $\overline{CG} \perp \overline{BF}$, and $\overline{EC} = \overline{EG}$, find the area $a\triangle EGC$ and prove that $a\triangle EGC/a\square ABCD = 1/5$.

Q 28: $\triangle ABC$ is an equilateral triangle with side length $12\ cm$, $\overline{AD} \perp \overline{BC}$, $\overline{DM} \perp \overline{MC}$, and $\overline{BE} \perp \overline{AM}$, find the ratio $\overline{CE}/\overline{EF}$.