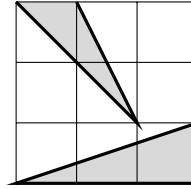


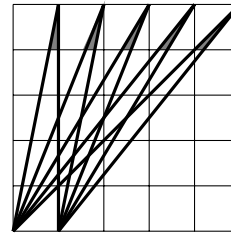
“DIFFICULT-EASY PROBLEMS” FROM GEOMETRY

Part 2

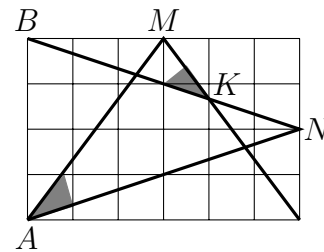
Problem 1. Prove that the given angles are equal.



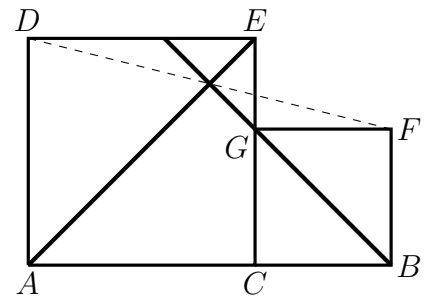
Problem 2. Find the total sum of the coloured angles.



Problem 3. Prove that $\angle MAN = \angle BKM$

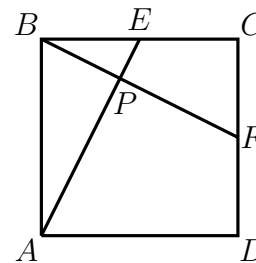


Problem 4. Point C is marked in segment AB . Squares $ACED$ and $CBFG$ are constructed (in the same half of plane). Prove that the point of intersection of AE and BG belongs to segment DF .

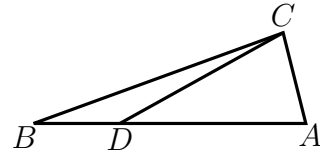


Problem 5. In square $ABCD$, E and F are the mid-points of sides BC and CD respectively. If P is the point of intersection of AE and BF prove:

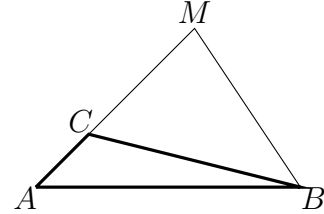
- (a) $PD = AD$;
- (b) $\angle AED = \angle ADP$;
- (c) $\angle APC = \angle BPC = 135^\circ$.



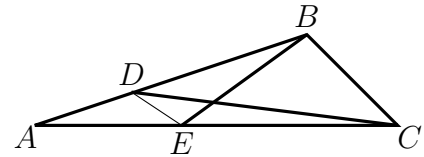
Problem 6. ABC is isosceles triangle with $\angle A = \angle C = 80^\circ$. Points D is marked on side BA so that $BD = AC$. Determine the value of $\angle DCA$.



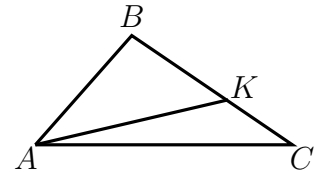
Problem 7. In triangle ABC , $\angle A = 45^\circ$ and $\angle B = 15^\circ$. Point M is chosen on extension of side AC (through point C) so that $MC = 2AC$. Determine the value of $\angle AMB$.



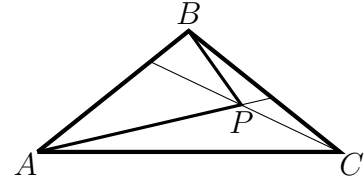
Problem 8. In triangle ABC , $\angle B = 100^\circ$ and $\angle C = 65^\circ$. Points D and E are marked on sides AB and BC respectively so that $\angle DCB = 55^\circ$ and $\angle EBC = 80^\circ$. Determine the value of $\angle EDC$.



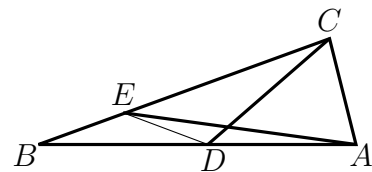
Problem 9. Point K is marked on side BC of triangle ABC so that $BK = 2KC$. Given that $\angle ACB = 45^\circ$, $\angle AKB = 60^\circ$, determine a value of $\angle ABC$.



Problem 10. Triangle ABC is isosceles ($AB = BC$) and $\angle ABC = 96^\circ$. Point P is marked in interior of ABC so that $\angle ACP = 30^\circ$ while $\angle PAC = 18^\circ$. What is a value of $\angle BPA$?



Problem 11. ABC is isosceles triangle with $\angle A = \angle C = 80^\circ$. Points D and E are marked on sides AB and BC respectively so that $\angle ACD = 60^\circ$ and $\angle CAE = 70^\circ$. Define the value of $\angle DEA$.



Problem 12. In triangle ABC , $\angle ABC = 70^\circ$ and $\angle ACB = 50^\circ$. Point D and E are chosen on sides AB and AC respectively so that $\angle DCB = 40^\circ$ while $\angle EBC = 50^\circ$. What is a value of $\angle EDC$?

