PLANE PARALLEL TO A STRAIGHT LINE. PARALLEL TO THE PLANE. MASLA THE METRIC.

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Annotasiya. Will perpendikulyarlik to the plane of the straight line. Mutually perpendicular plane. Determine the angle between the straight line and plane and two plane. The second area corresponding to a plane corresponding to two mutually mutually kesishuvchi kesishuvchi of two straight lines parallel to a straight line, respectively, and are mutually parallel in a plane

Key words: *the plane perpendicular to a straight line, mutually perpendicular plane, the angle between the straight line and the plane.*

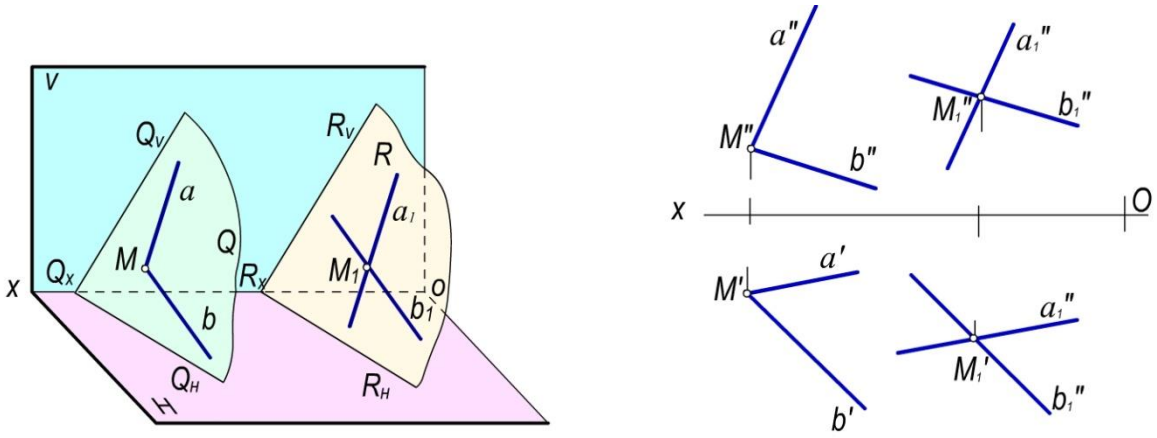
Plane parallel to a plane corresponding to the second area corresponding to two mutually mutually kesishuvchi kesishuvchi of two straight lines parallel to a straight line, respectively, and are mutually parallel in a plane is called.

You *on the* plane corresponding to $a \square b$ kesishuvchi the second in a straight line P corresponds to plane$_1 \square b_1$ are respectively parallel to a straight line kesishuvchi mutually, this will mutually be also parallel to the plane (1-picture).

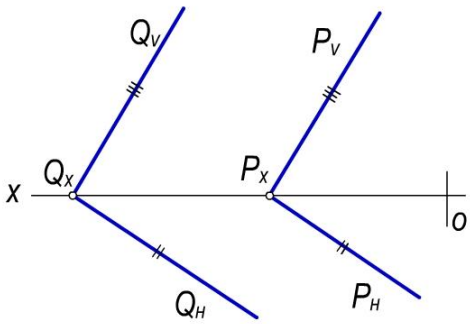
You two plane be parallel to each other in space, in the graph are parallel to this plane, also called a mutually scars, that is: $Q \parallel R$ is $Q_H \parallel R_H$, $Q_V \parallel R_V$ and $Q_W \parallel R_{-W}$ (2-picture).

In the graph the horizontal and frontal plane parallel tracks for a projective their profile will not be enough. For example, 3-in the picture, given G and G_1 in plane

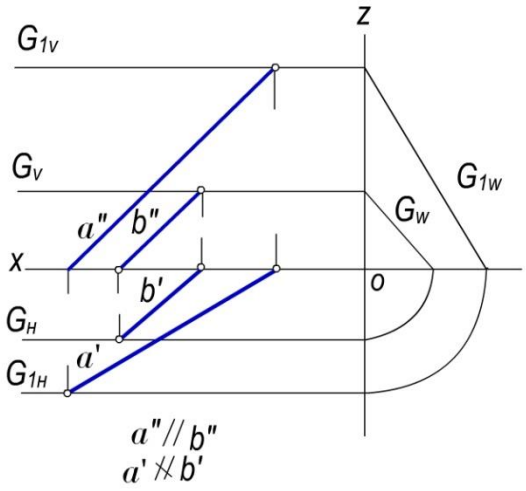
G_H || G_{1H} and G_V || G_{1V} if $G_W \neq G_{1W}$ to $G \neq G_1$ is. This plane corresponding to the plane of the situation, the interaction of a and b can be detected with the help of a straight line, thus a □ G_1 and b □ *of g* in the case *of a*" || b" is $a' \neq b$to' $a \neq b$ and $G \neq G_1$ is.



1-picture



2-picture

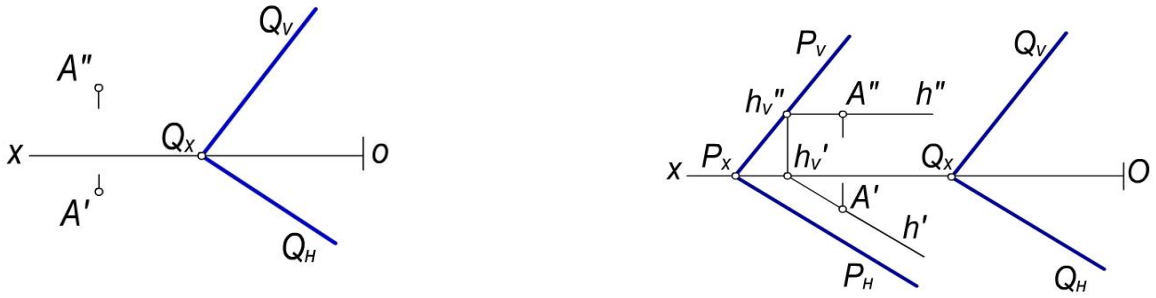


3-picture

Optional parallel to the plane through the point in space is given to only one plane can be held.

Example A (A', A") from the point of Q (Q_H, Q,v) plane parallel to P (P_H, P,v) plane may require you to transfer (4-*a*picture). According to the characteristics of

the plains parallel to the *P* traces of the plane $P_H \parallel Q_H$ and $P_Y \parallel Q_Y$ $P_W \parallel Q_W$ must be. And a straight line parallel to the plane of the conditions to solve the example using *A* point *A*' and *A*" projective from *The* optional plane parallel to a straight line, *h* (*h*', *h*") is held horizontal (4 - b in the picture).

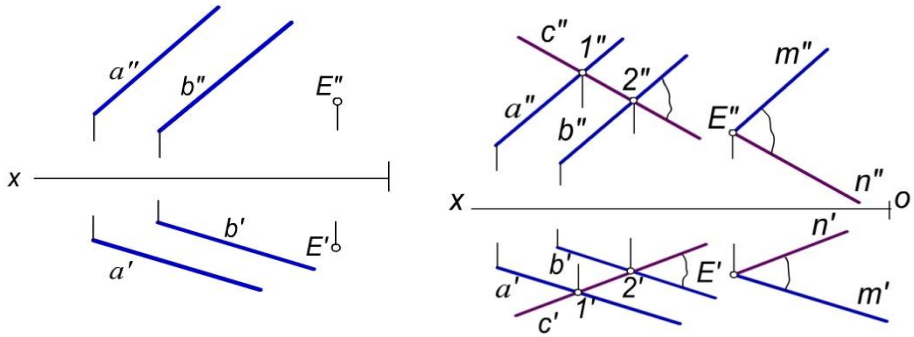


a) b)

4-picture

This trail in the frontal horizontal $h"_V$ izlangan and *P* the plane of *the* p_V plane given footprint Q_V parallel to iziga is held. Then P_V □ *Ox* = P_X from the point *to the* plane Q_H iziga make izlangan plane parallel to the $P_{h\ of}$ the trail is held.

*Example***.** *E* (*E*', *E*") from the point of *a* (*a*', *a*") and *b* (*b*', *b*") with the parallel line parallel to the given plane may require conduct (5-*a*picture).



a) **b)**

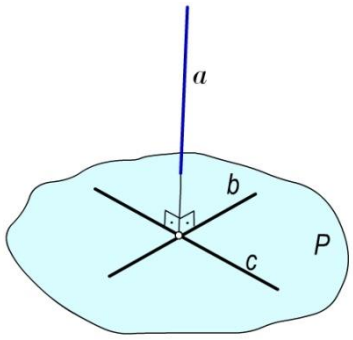
5-picture

This example is relevant to the area to solve the given optional s(*c*', *c*") has held the line on and then *E* point *E*' and *E*" from projective *a* projective lines respectively parallel to the s and *m*'□***n'***, *m*"□ ***n"*** kesishuvchi izlangan projective plane is the projective lines.

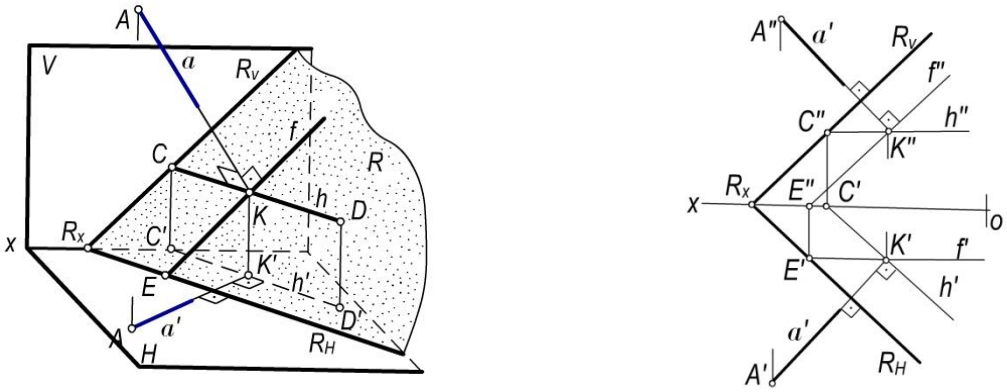
The appropriate point into the area from which you can spend a lot of straight lines parallel to the plane is endless. Such a straight line is parallel to the plane the plane that represents the given bundle.

Will perpendikulyarlik to the plane of the straight line. Definition**.** Two mutually perpendicular to a plane in a straight line a straight line a straight line that is perpendicular to the plane also kesishuvchi.

Thus, *b*□*P* and *c*□*P* if *b*□*c* and *a*□*b* and *a*□*c* if *a*□*P* (6-picture). Therefore, stripes line perpendicular to the plane perpendicular to the plane on a straight line corresponding to any line on this plane is perpendicular both to the main line. Assume *a* plane is a straight line *h* of the horizontal and *f* which is perpendicular to the frontal (7-*a*picture).



6-image



a) b)

7-picture

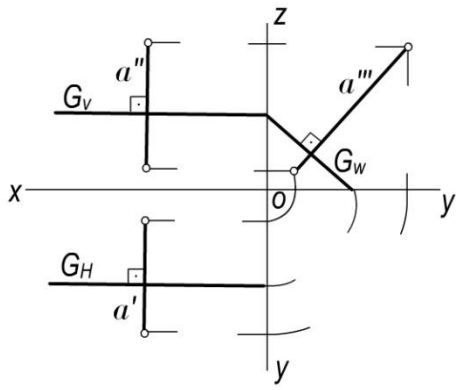
In accordance with the feature of projective going right corner $\angle AKD = 90^o$ and $KD \parallel H$ be the horizontal projective right corner of $\angle A'K'D' = 90^o$ is. Therefore, $a' \square h'$ or ($a' \square P_n$) is.

If you plane is given with the traces in the graph, it is called a projective plane which is perpendicular to a straight line perpendicular to one of the tracks called, respectively (8-picture).

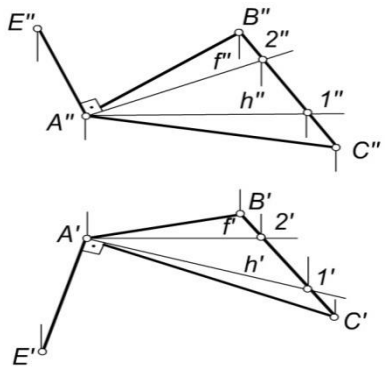
Using the sign from the straight line and the plane can solve many issues of mutual perpendikulyarlik metric.

Example $\square ABC$ with the given area A perpendicular be held on the three (9-picture). Algorithm are solved by the following example.

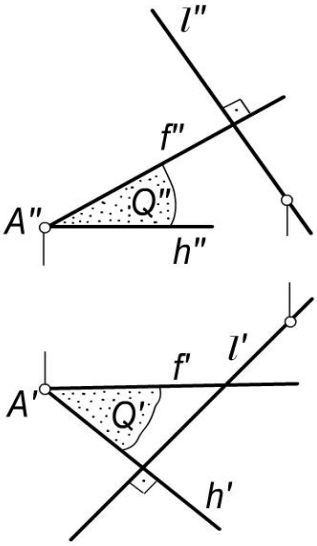
1. $\square ABC$ the plane of $h(h', h'')$ horizontal and $f(f', f'')$ are held frontal.
2. Plane in A point A' and A'' projective optional length of $A'E' \square h'$ and $A''E'' \square f''$ perpendicular to the projective made.



8 picture



9 picture



4.50-picture

example $A(A', A'')$ through the point $l(l', l'')$ may hold a straight line perpendicular to the plane (10-picture). To do this:

- A point A' and A'' projective from $h' \square\ l'$ and $h'' \| Ox$ of the horizontal plane projective make izlangan is held;
- A point A' and A'' from projective $f' \| Ox$ and $f \rightarrow'' \square l''$ is held to the frontal plane of the projective;
- which is formed $h \square f(h' \square f'$ and $h'' \square f'')$ represents the plane izlangan kesishuvchi strips.

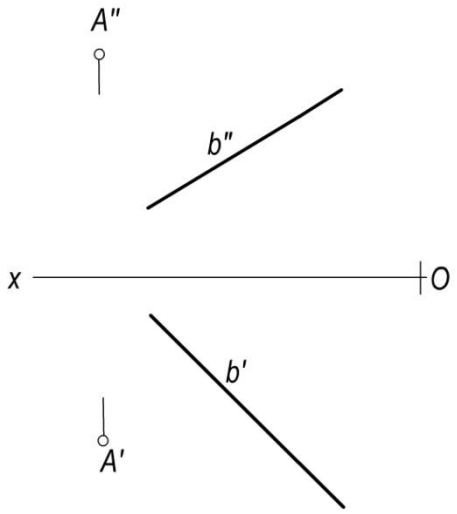
The horizontal plane $h \square\ l$ and frontal $f \square\ l$ to this plane l is perpendicular to a straight line.

Example. $A(A', A'')$ passing through the point a and $b(b', b'')$ traces a straight line that is perpendicular to the plane may be built (11–picture).

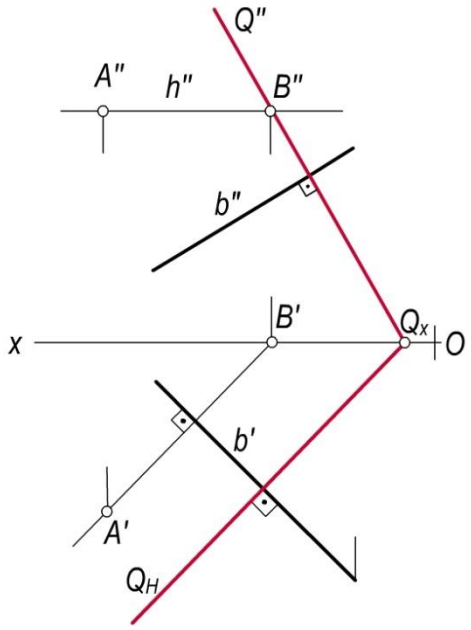
To do this:

- A point A' and A'' b a straight line perpendicular to the line from the horizontal projective plane is held to h (12-picture).
- horizontal frontal B of the trail is made.

- *The* plane Q_V trail frontal $Q_V \square B''$ and $Q_V \square b''$ will be transferred. The plains of The_H , while the horizontal footprint of Q_X from $Q_H \square Q_X$ and $Q_H \square b'$ (or $Q_H \| h'$) is held.



11 picture



12 picture

As a result, $Q_H \square b'$ and $Q_V \square b''$ to be *Trying* $\square b$ is. The transfer line can solve this example by way of both frontal plane.

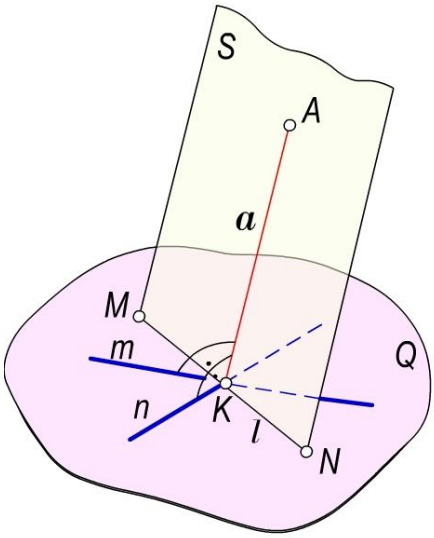
Determine the distance between the point and the plane. The distance from the point to the plane of the perpendicular from the point was put tekislikkacha is determined by the length. Should be made on the basis of its area to determine the length of this perpendicular.

The distance from the point to be made following tekislikkacha determined by the algorithm (4.53-picture).

- A point in *The* plane to a perpendicular is held: $a \square A$ and $a \square Q$.
- This is perpendicular *to the* plane of the intersection with A_1 point (basis) is determined: $K = a \square Q$

To do this:

- *a* pass perpendicular assistant *S* □ *a* plane is held;
- *Q* and *S* plane *l* of intersection of the line is made from;
- *a* plane perpendicular to the intersection of the line *l is* the intersection with *K* found the point is: *K* =*a*∩*l*. In the graph *a k* incision *from* *a* point *Q* tekislikkacha izlangan the distance.



13-picture

Example. Given *A* (*A*', *A*") from the point of *Q* (Q_H, Q_V) determine the distance tekislikkacha, and (14-picture). Made according to the algorithm cited above:

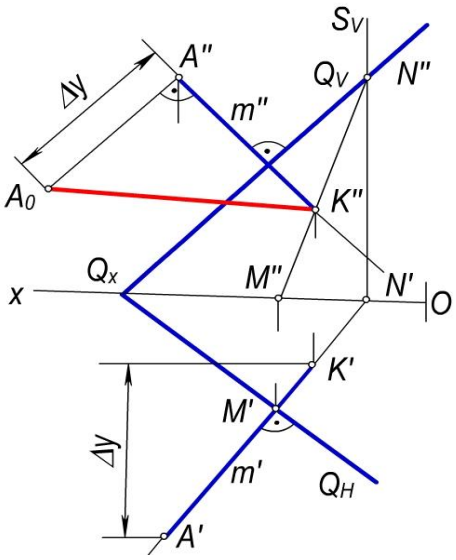
- *A* point *A*' and *A*" projective from *The* plane of Q_H and Q_V are respectively perpendicular to the traces of *a*' and *a*" projective will be held.
- This is perpendicular *to the* plane of the point of intersection with the projective to determine:
  - *a* perpendicular from a projective auxiliary horizontal *M* (M_H, M_V) - plane is held in;

- *Q* and *the s* plane, the intersection of the line *l(l', l")* with *a* (*a*', *a*") the point of intersection of the perpendicular *K*'s *K '* and *K "* projective determine.

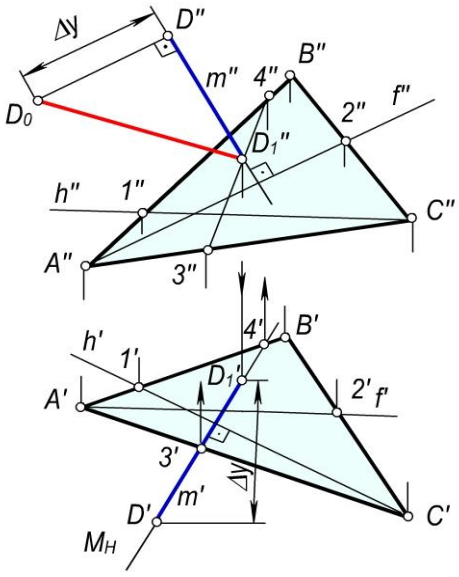
- In the graph, which is formed *with a*' *K* ' and *A*" *K* " will be of izlangan projective distance. This distance is the actual size of rectangular □A_0A' *K* " 's A_0 *K "* will be of gipotenuza.

Example. D (*D*', *D*") from the point of □*ABC* (□*A*'*B*'*C*', □*A*"*B*"*C*") may determine the distance tekislikkacha (15-picture). The following example made on the basis of the algorithm is charged.

- □*ABC* of horizontal and frontal plane projective will be held.
- *D* point of *D*' and *D*" of the projective perpendicular from *m*' and *m*" of projective *m*'□*h*' and *m*"□ *f "* is held.
- Of the perpendicular □*abc is* the intersection point with the plane D_1 s D_1' and D_1" projective identification.



14-picture



1of 5-picture

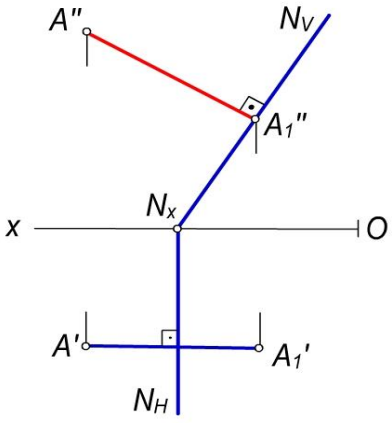
To do this:

- m a projective auxiliary horizontal perpendicular from $M(M_H, M,_V)$- plane is held;
- □ABC and *the m* plane of intersection of the line *3′4′* and *3″to 4″* is made of projective;
- projective plane of intersection of the line *3′4′* and *3″to 4″* with m', m'' the intersection of the perpendicular D_1 point D_1' and D_1'' projective identification.

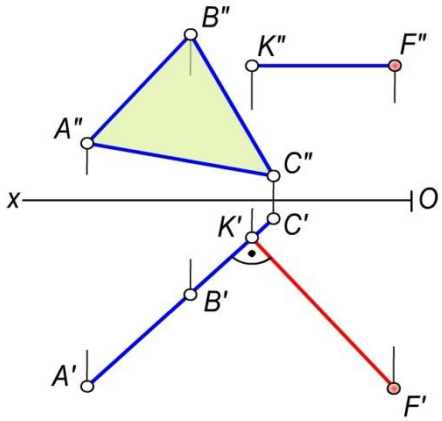
In the graph, which is formed $D'D_1'$ and $D''D_1''$ izlangan will be of projective distance. Rectangular size of his true □$D_0D''D_1''$ s D_0D_1'' will consist gipotenuza.

Private plane is that you in a given situation, it does not require to determine the distance from a given point without tekislikkacha q'o'shimcha yasashlar. For example, $A(A', A'')$ from the point of $n(n_H, N_{,V})$ is a projective frontal tekislikkacha the actual size of the distance (1of 6-picture) frontal point of A'' projective plane from N_V of frontal perpendicular iziga was put $A''K_1''$ is equal to the projective frontal.

17-in the picture, $F(F', F'')$ from the point of a projective horizontal □ABC(□$A'B'C'$, □$A''B''C''$) to determine the distance tekislikkacha described.



16- picture



1of 7-picture

Determine the distance between point and straight line. **The appropriate point to a straight line and the distance between the same point is measured by the length of a straight line from the perpendicular was put into.**

Chiziqqacha determined in the following order on the distance from the point (1to 8,a-picture).

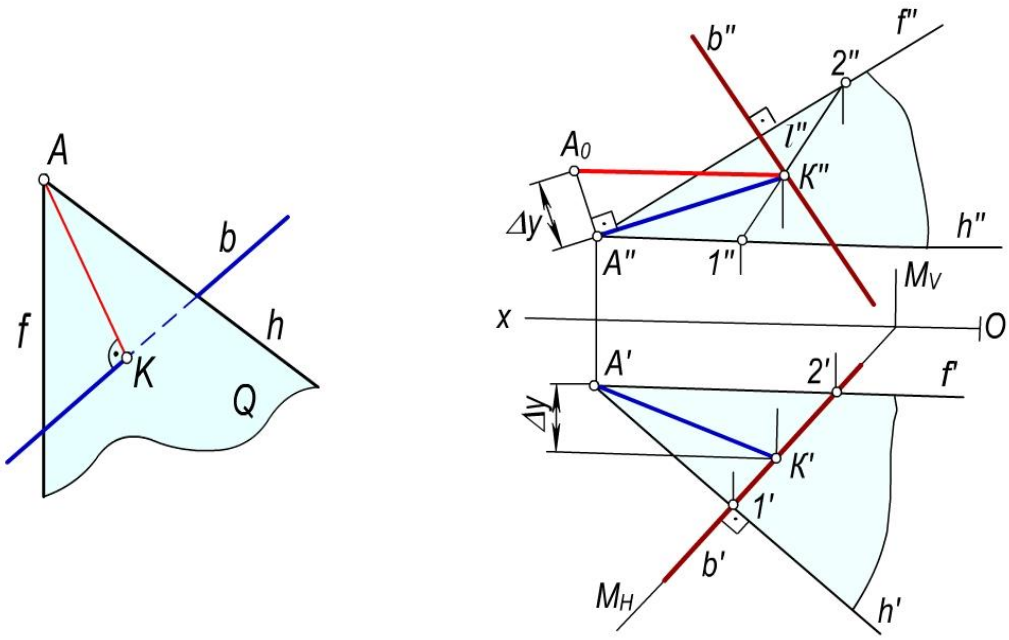
26. *A* point *b is* a straight line perpendicular to *The* plane is held in: *Q*□*A*, *Q* □ *b*.

27. Given *b* of the straight line *to the* intersection point with the plane is determined: *K*=*b*□*Q*.

28. *A* and *K* of the point which is formed adjacent mutually *AK* incision *from a* point *b* on chiziqqacha distance.

In the graph *A*(*A*', *A*"), point *b*(*b*', *b*") chiziqqacha on the distance (18,b-picture) to determine:

- *A*(*A*', *A*') of the plane from the point of *h*(*h*', *h*") horizontal and *f(f', f ")* frontal *b*(*b*', *b*") is held perpendicular to a straight line.
- Given *b* of the straight line *to the* intersection point with the plane *K* 's *K*' and *K*" of the projective to determine *b*(*b*', *b*") from a straight line in a horizontal projective auxiliary *M*(M_H, M_V)- plane is held. *Q* and *the m* plane, the intersection of the line *l* =□*M* 's *l*', *l*" projective made.
- In the graph *b* of a straight line *l is* the intersection with the line *K* of the frontal point of the projective *K*"=b"□*h*" determined with his *K*' while horizontal projective *b*' lineis appropriate qa.
- *A* point *A*' and *A*" of projective *K* - point *K*' and *K*" will be adjacent with projective. Which is formed *A*'*K*' and *A*"*K*" the incision *from a* point *b* on chiziqqacha will be of projective distance.



a) **b)**

18-picture

In the graph A_0K" incision *from a* point *b* on the actual size of the distance chiziqqacha on rectangular □$A_0A"K"$ is determined by the way made.

Thus, this type of example *A*(*A*', *A*"), which was from the point of *b*(*b*', *b*") a straight line which is perpendicular to *The* plane of the traces can solve both by way of transfer.

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