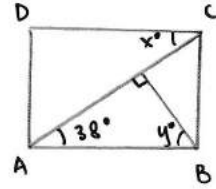
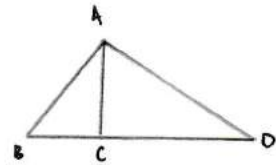


1. In diagram, ABCD is a rectangle, find the value of x and y.
 如图, ABCD 是个长方形, 求 x 与 y 之值

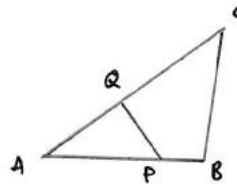


2. In diagram, given $BC = \frac{1}{3}BD$ and the area of $\triangle ABC$ is 24cm^2 , find the area of $\triangle ABD$
 如图, 已知 $BC = \frac{1}{3}BD$, 三角形 $\triangle ABC$ 的面积为 24cm^2 , 求 $\triangle ABD$ 的面积



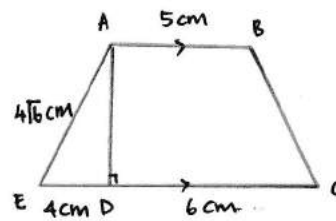
3. In diagram, given that $AP=4\text{cm}$, $AQ=3\text{cm}$, $QC=5\text{cm}$, $PB=2\text{cm}$,
 如图, 已知 $AP=4\text{cm}$, $AQ=3\text{cm}$, $QC=5\text{cm}$, $PB=2\text{cm}$,

- Show that $\triangle APQ$ is similar to $\triangle ACB$
 证明三角形 $\triangle APQ$ 相似于 $\triangle ACB$
- Find the length of PQ if $CB=5\text{cm}$
 若 $CB=5\text{cm}$, 求 PQ 的长度

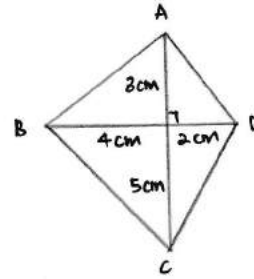


4. In diagram, ABCE is a trapezium, find
 如图, ABCE 是个梯形, 求

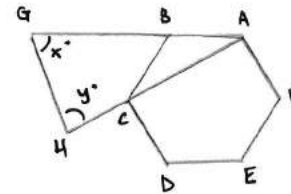
- Length of AD
 AD 的长度
- Area of trapezium ABCE
 梯形 ABCE 的面积



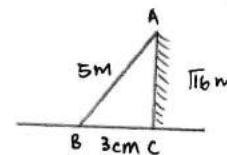
5. In diagram, ABCD is a quadrilateral with diagonals perpendicular to each other. Find the area of ABCD
 如图, ABCD 是个对角线相互垂直的四边形, 求 ABCD 的面积



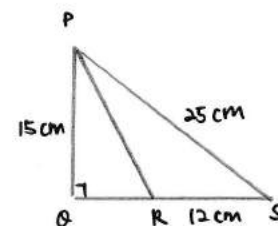
6. In diagram, ABCDEF is a regular hexagon. ABG and ACH are straight lines. Find the value of $x+y$
 如图, ABCDEF 是个正六边形, ABG 和 ACH 为直线, 求 $x+y$ 之值



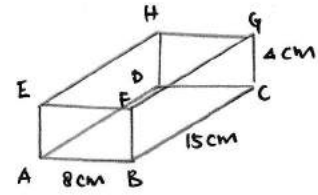
7. Diagram shows a bamboo stick AB length 5m is placed against a wall. Determine whether $\triangle ABC$ is a right-angled triangle
 如图, 一竹枝 AB 长 5 米靠放置在墙上, 问 $\triangle ABC$ 是否是个直角三角形?



8. In diagram, PQR is a right-angled where $\angle PQR = 90^\circ$, $PQ = 15\text{cm}$ and $PS = 12\text{cm}$, find the length of
 如图, PQR 为一直角, 已知 $\angle PQR = 90^\circ$, $PQ = 15\text{cm}$ 和 $PS = 12\text{cm}$, 求下列长度
 a. QS
 b. PR

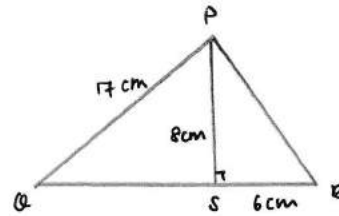


9. Diagram shows a cuboid with $AB=8\text{cm}$, $BC=15\text{cm}$ and $GC=4\text{cm}$, find the length of AC and EC
 图为一立方体 with $AB=8\text{cm}$, $BC=15\text{cm}$ 和 $GC=4\text{cm}$, 求 AC 和 EC 的长

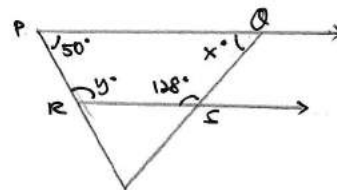


10. In figure, QSR is a straight line. Calculate
 如图, QSR 是一条直线, 计算

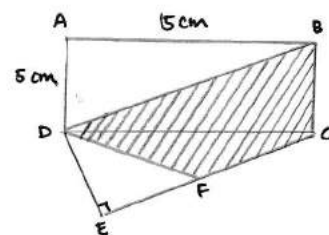
- The length of PR
 PR 的长度
- The perimeter of triangle PQR
 三角形 PQR 的周长



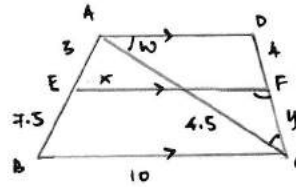
11. In figure, PQ is parallel to RS , find the value of $x+y$
 如图, PQ 平行于 RS , 求 $x+y$ 的值



12. In figure, $ABCD$ is a rectangle and CDE is a right-angle triangle. Given F is the midpoint of CE and $CE=12\text{cm}$, find the area of the shaded region
 如图, $ABCD$ 是一长方形, CDE 是直角三角形, 若 F 是 CE 的中点, 而 $CE=12\text{cm}$, 求阴影部分的面积

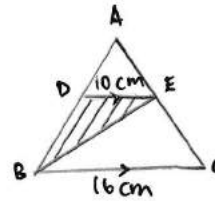


13. In figure, if $\angle GFC = 95^\circ$, $\angle ACD = 48^\circ$, find the unknown angle w and lengths x , y
 如图, 若 $\angle GFC = 95^\circ$, $\angle ACD = 48^\circ$, 求角 w 和 x 、 y 的长度



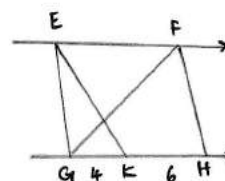
14. In figure, $DE \parallel BC$, $DE = 10\text{cm}$, $BC = 16\text{cm}$, area of $\triangle ABC = 64\text{cm}^2$
 如图, $DE \parallel BC$, $DE = 10\text{cm}$, $BC = 16\text{cm}$, 三角形面积 $\triangle ABC = 64\text{cm}^2$

- Show that $\triangle ADE \sim \triangle ABC$
证明相似三角形 $\triangle ADE \sim \triangle ABC$
- Find the area of $\triangle ADE$
- 求 $\triangle ADE$ 的面积
- Find the area of $\triangle BDE$
求 $\triangle BDE$ 的面积



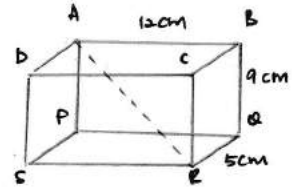
15. In a rhombus ABCD, given that $AC = 11\text{cm}$, $BD = 20\text{cm}$, find the area of the rhombus ABCD
 在菱形 ABCD, $AC = 11\text{cm}$, $BD = 20\text{cm}$, 求菱形 ABCD 的面积

16. In figure, $EF \parallel GH$, $GK = 4\text{cm}$, $KH = 6\text{cm}$, if area of $\triangle EGK = 12\text{cm}^2$, find the area of parallelogram EFGH
 如图, $EF \parallel GH$, $GK = 4\text{cm}$, $KH = 6\text{cm}$, 若面积 $\triangle EGK = 12\text{cm}^2$, 求平行四边形 EFGH 的面积



17. In figure, find the length of PR and AR

如图，求 PR 和 AR 的长度

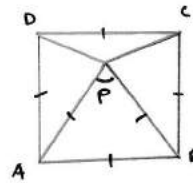


18. The shortest side of a right-angled triangle is 6cm. If the difference between the other two sides is 2cm, find the perimeter of the triangle

已知直角三角形最短的长度是 6cm,若其余两个边之差是 2cm,求三角形的周长

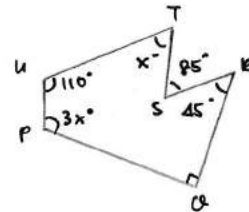
19. In figure, ABCD is a square, PAB is an equilateral triangle, find $\angle DPA$

如图，ABCD 是个正方形，PAB 是个等边三角形，求角 $\angle DPA$



20. In figure, PQRSTU is an irregular hexagon, find the value of x

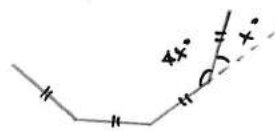
如图，PQRSTU 是个六边形，求 x 之值



21. Figure shows part of a regular polygon. PQR is a straight line. Find

图中显示正多边形，PQR 是直线，求

- An interior angle of the polygon
多边形的内角
- The number of sides of the polygon
多边形的边数



集合 SETS

1) (a) It is given that the universal set $\xi = \{x: 20 \leq x \leq 35, x \in \mathbb{Z}\}$

已知泛集 $\xi = \{x: 20 \leq x \leq 35, x \in \mathbb{Z}\}$

Set A = {x: x is a multiple of 3}

集合 A = {x: x 是 3 的倍数}

Set B = {x: x is a factor of 60}

集合 B = {x: x 60 的因子}

Set C = {x: x is a number whose sum of digits is less than 5}

集合 C = {x: x 是数字之和小于 5 的数字}

(i) Use set notation, list the elements in Set A, Set B and Set C.

以范恩图表示集合 A、B、C 中的元素

(ii) Find $(A \cap B)'$

求 $(A \cap B)'$

(iii) Find $n(A \cup C)'$

求 $n(A \cup C)'$

(b) A beverage company conducted a survey on 100 candidates, and found the following.

一家饮料公司对 100 名候选人进行了调查，发现如下。

24 people prefer coca-cola only, 24 人只喜欢可口可乐

14 people prefer tea only, 14 人只喜欢喝茶

6 people prefer plain water only, 6 人只喜欢白开水

12 people prefer coca-cola and plain water, 12 人喜欢可口可乐和白开水

18 people prefer tea and plain water, 18 人喜欢茶和白开水

30 people prefer coca-cola and tea, 30 人喜欢可口可乐和茶

Only 8 people don't like all these three drinks, 只有 8 人不喜欢这三种饮料

x people prefer all these three drinks, x 人这三种饮料都喜欢

(i) Draw a Venn Diagram to show the above information

绘范恩图显示上述信息

(ii) Find the value of x

求 x 的值

(iii) Find the number of people who prefer 2 types of drinks.

求喜欢 2 种饮料的人数

2)(a) In the Venn diagram, shade $(A \cap B \cap C)' \cap (A \setminus B)$

试在图中的范恩图，将 $(A \cap B \cap C)' \cap (A \setminus B)$ 以阴影表示

(b) There are 73 students in a classroom, given

在一个课室里，共有 73 名学生，已知，

31 students participate in basketball team, 31 个同学参加篮球组

29 students participate in volleyball team, 29 个同学参加排球组

30 students participate in football team, 30 个同学参加足球组

6 students participate in basketball and volleyball, 6 个学生参加篮球和排球

11 students participate in volleyball and football, 11 个同学参加排球和足球

4 students participate in basketball and football, 4 个同学参加篮球和足球

求 find

- (i) the number of persons participating in the three ball games at the same time
同时参加三项球类运动的人数
- (ii) the number of persons participating in at least two ball games
参加至少两项球类运动的人数

(C) From the diagram, given $n(\xi) = A \cup B \cup C$, $n[(A \cup B) \cap C] = 16$, find

在图中，已知 $n(\xi) = A \cup B \cup C$, $n[(A \cup B) \cap C] = 16$, 求

- (i) x
- (ii) $n(B' \cap A)$

3. (a) $\xi = \{x : x \text{ is an integer, } 10 < x \leq 30\}$, $A = \{x : x \text{ is a perfect square number}\}$, $B = \{x : x \text{ is a multiple of } 4\}$.

$\xi = \{x : x \text{ 是整数, } 10 < x \leq 30\}$, $A = \{x : x \text{ 是完全平方数}\}$, $B = \{x : x \text{ 是 } 4 \text{ 的倍数}\}$.

- i) List the elements of A , B , $A \cap B$, $A \cup B$
列出 A , B , $A \cap B$, $A \cup B$ 的元素
- ii) Find the value of $n(A \cap B')$, $n(B \setminus A)$.
求 $n(A \cap B')$, $n(B \setminus A)$ 的值

b) There are 1000 students in the class. Every student must participate in at least one ball game. Among of them, 683 play volley ball, 594 play badminton, 430 play tennis, 258 play volley ball and tennis, 343 play badminton and volley ball, 253 play badminton and tennis.

班上有 1000 名学生。每个学生必须至少参加一场比赛。其中，683 打排球，594 打羽毛球，430 打网球，258 打排球和网球，343 打羽毛球和排球，253 打羽毛球和网球。

i) draw a Venn Diagram to demonstrate the above information.

绘一个范恩图来展示上述信息。

ii) find the number of students who play all the three games.

参加三项比赛的学生人数

iii) find the number of students who play volley ball and badminton only.

求参加排球和羽毛球比赛的学生人数

iv) find the number of students who play only one ball game.

求只参加一项球赛的学生人数

4. In a form of 300 students, 400% like swimming, 500% like watching movie, 60% like reading.

20% of them like swimming and watching movie, 20% of them like swimming and reading,

30% like watching movie and reading. 10% like all these three activities.

在 300 名学生当中，400% 喜欢游泳，500% 喜欢看电影，60% 喜欢阅读。

20% 的人喜欢游泳和看电影，其中 20% 喜欢游泳和阅读，

30% 喜欢看电影和阅读。10% 三个活动都喜欢。

(a) Draw a Venn diagram by using the number of students to represent above information.

绘一个范恩图来展示上述信息。

(b) Find the number of students that only like one activity.

求只喜欢一项活动的学生人数

(c) Find the number of students that only like two activities.

求只喜欢两项活动的学生人数

(d) Find the number students that doesn't like anyone of these three activities.

求三项活动都不喜欢的学生人数

(e) Find the number of students that like at least one activity.

求至少喜欢一项的学生人数