

2014



PreEcolier

KANGAROO MATH COMPETITION MALAYSIA 2014

INSTRUCTIONS

Time allowed: 75 minutes.

Languages: English, Bahasa Malaysia & Mandarin.

There are 20 questions in the PreEcolier and Ecolier papers.

There are 24 questions in the Benjamin, Cadet, Junior and Student papers.

Problems 1 to 10 are worth 3 points each.

Problems 11 to 20 are worth 4 points each.

Problems 21 to 24 are worth 5 points each.

No point will be deducted for an incorrect answer.

Do not open this booklet until you are told to do so.

Fill in your particulars on the answer sheet.

Mark your answers clearly on the answer sheet using a 2B pencil.

There are some blank pages at the back of the booklet; you may use them as scratch paper.

Calculators are not allowed

Kangaroo papers are being taken by more than 6 million students worldwide.

It is forbidden to discuss or publish the problems online until one month after the contest date.

GOOD LUCK

3 points

1. Which drawing is the central part of the picture with the star?

Gambarajah yang manakah menunjukkan bahagian tengah gambar bintang tersebut?

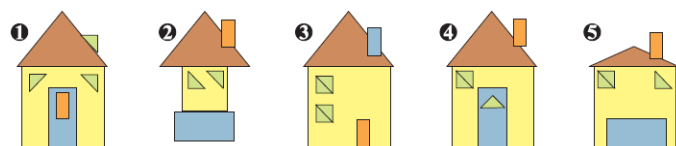
以下哪个图案是星星图片中间的部分?



2. Which houses are made using exactly the same pieces of triangular or rectangular shape?

Rumah-rumah yang manakah dibina menggunakan bahagian segitiga dan segiempat yang sama?

以下哪几间屋子是由完全相同的三角形和长方形组成的?



(A) 1, 4

(B) 3, 4

(C) 1, 4, 5

(D) 3, 4, 5

(E) 1, 2, 4, 5

3. When Koko the Koala does not sleep, he eats 50 grams of leaves per hour. Yesterday, he slept 20 hours. How many grams of leaves did he eat yesterday?

Apabila Koko si Koala tidak tidur, dia memakan 50 gram daun setiap jam. Semalam, dia telah tidur selama 20 jam. Berapa gram daun yang dimakan olehnya semalam?

当Koko这只树熊不睡觉时，它每小时能吃50克的叶子。昨天它睡了20小时。请问它昨天共吃了多少克的叶子?

(A) 0

(B) 50

(C) 100

(D) 200

(E) 400

4. Maria subtracts and gets as results the numbers from 0 to 5. She connects the dots, starting at the dot with the result 0 and ending at the dot with the result 5. Which figure does she get?

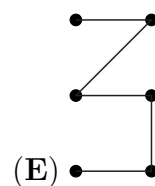
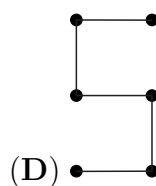
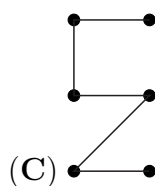
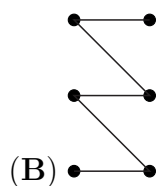
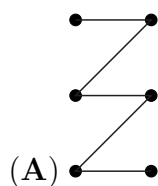
Maria membuat operasi tolak dan mendapat hasil daripada 0 hingga 5. Dia menyambungkan titik-titik tersebut bermula dari titik bernilai 0 dan berakhir dengan titik bernilai 5. Gambarajah manakah yang dilukis olehnya?

Maria使用减法并获得从0至5的答案。她从答案0的点开始一直连接到答案5的点。请问她会得到什么图形？

2-2 • • 6-5

8-6 • • 11-8

13-9 • • 17-12



5. Adam built fewer sandcastles than Martin but more than Susan. Lucy built more sandcastles than Adam and more than Martin. Dana built more sandcastles than Martin but fewer than Lucy. Who of them built the most sandcastles?

Adam membina kurang istana pasir berbanding Martin tetapi lebih berbanding Susan. Lucy membina lebih istana pasir berbanding Adam dan lebih berbanding Martin. Dana membina lebih istana pasir berbanding Martin tetapi kurang berbanding Lucy. Siapakah di antara mereka yang membina paling banyak istana pasir?

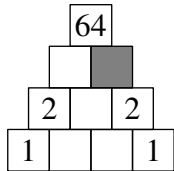
Adam建的沙堡比Martin少但比Susan多。Lucy建的沙堡比Adam和Martin多。Dana建的沙堡比Martin多但却比Lucy少。请问谁建的沙堡最多？

- (A) Martin (B) Adam (C) Susan (D) Dana (E) Lucy

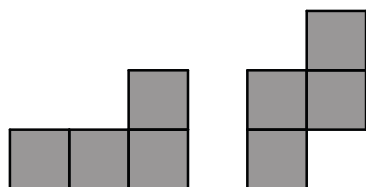
6. Monica writes numbers in the diagram so that each number is the product of the two numbers below it. Which number should she write in the grey cell?

Monica menulis nombor-nombor di dalam gambarajah berikut supaya setiap nombor adalah hasil darab dua nombor dibawahnya. Nombor apakah yang perlu ditulis di dalam petak kelabu tersebut?

Monica在图表中填写数字，使得每个数字是下方两个数字的积。请问灰格中她应填写什么数字？



- (A) 0 (B) 1 (C) 2 (D) 4 (E) 8



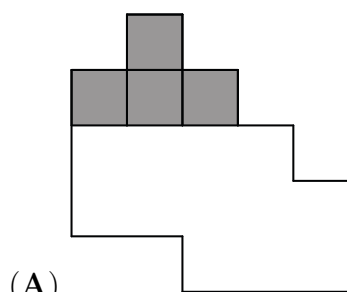
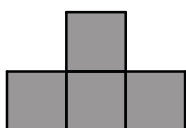
7.



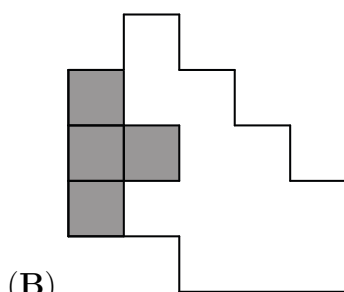
Ann has four pieces as shown. With these pieces she can completely cover the shape. Where should she put the piece below?

Ann mempunyai empat bentuk seperti ditunjukkan. Dengan menggunakan bentuk-bentuk tersebut, dia dapat menutup keseluruhan gambarajah. Dimanakah dia perlu meletakkan bentuk di bawah?

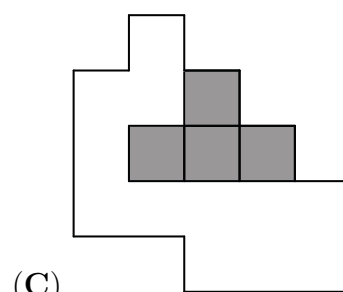
Ann拥有四块如图的纸片，用这些纸片她可以完整的覆盖整个图形。请问她该把这张纸片放在以下的哪里？



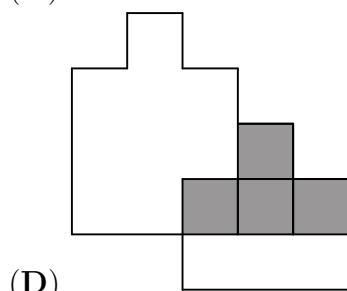
(A)



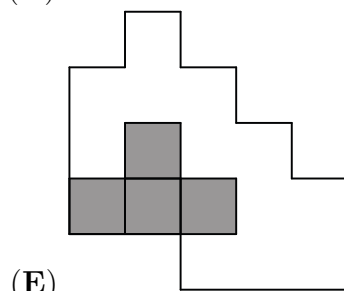
(B)



(C)



(D)

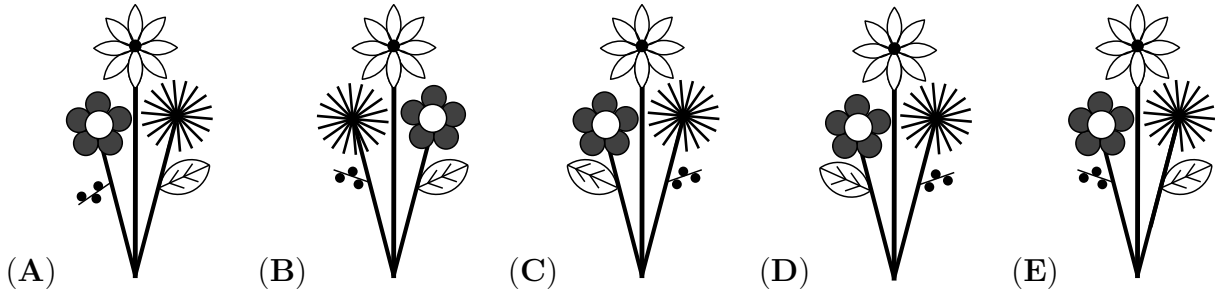
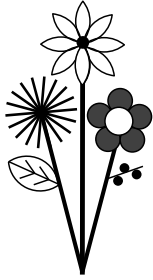


(E)

8. Mr. Brown has painted flowers on the store window (see picture). How does these flowers look like from the other side of the window?

Mr. Brown telah mengecat gambar bunga berikut di tingkap sebuah kedai (lihat gambarnya). Bagaimanakah rupa bunga tersebut dari arah seberang tingkap itu?

Brown先生在橱窗上画了一些花朵（如图）。请问这些花朵从橱窗的另一边看是怎样的？



9. Some candies were in a bowl. Sally took half of the candies. Then Tom took half of the candies left in the bowl. After that Clara took half of the remaining candies. In the end there were 6 candies in the bowl. How many candies were in the bowl at the beginning?

Suatu mangkuk mengandungi beberapa gula-gula. Sally mengambil separuh daripada gula-gula tersebut. Kemudian, Tom mengambil separuh daripada gula-gula yang tinggal. Selepas itu, Clara mengambil separuh daripada gula-gula yang tinggal. Akhirnya terdapat 6 gula-gula di dalam mangkuk itu. Berapakah bilangan gula-gula pada asalnya?

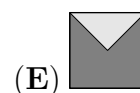
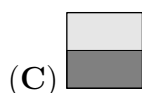
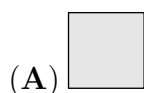
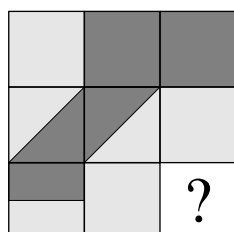
在一个碗中有一些糖果。Sally拿走了一半的糖果，然后Tom从剩下的糖果中又拿了一半。之后Clara又从剩下的糖果中再拿一半。如果最后碗中剩下6粒糖果，请问一开始时碗中有多少粒糖果？

- (A) 12 (B) 18 (C) 20 (D) 24 (E) 48

10. Which tile must be added to the picture so that the total light grey area is as big as the total dark grey area?

Petak manakah yang perlu ditambah kepada gambar tersebut supaya luas kawasan kelabu cair sama dengan luas kawasan kelabu gelap?

以下哪个瓷砖必需加入图片中以便浅灰色和深灰色的总面积相等？

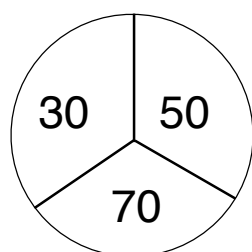


4 points

11. Paula shoots arrows at the following target. When she misses, she obtains zero points. Paula shoots two arrows and adds the number of points. Which of the following sums cannot be her score?

Paula sedang memanah menggunakan sasaran berikut. Jika dia terlepas sasaran, dia mendapat 0 markah. Paula menembak dua anak panah dan mengira jumlah markah yang diperolehi. Yang manakah di antara berikut tidak boleh menjadi jumlahnya?

Paula向图中的靶子射箭。如果她射不中靶子，她将获得零分。Paula射了两箭并把分数加了起来。以下哪个不可能是她的分数？



(A) 60

(B) 70

(C) 80

(D) 90

(E) 100

12. Rabbit Borya likes cabbages and carrots very much. In a day he eats either 9 carrots, or 2 cabbages, or 1 cabbage and 4 carrots. During one week Borya has eaten 30 carrots. How many cabbages has he eaten during this week?

Borya si Arnab suka memakan kobis dan lobak. Setiap hari, dia akan memakan sama ada 9 lobak, atau 2 kobis, atau 1 kobis dan 4 lobak. Sepanjang satu minggu, Borya telah memakan 30 lobak. Berapakah bilangan kobis yang dimakannya sepanjang minggu itu?

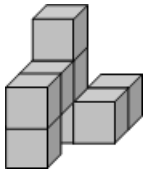
兔子Borya非常喜欢吃包菜和萝卜。每天它只吃9根萝卜，或2个包菜，或1个包菜和4根萝卜。一个星期内Borya吃了30根萝卜。请问这个星期里它共吃了多少个包菜？

- (A) 6 (B) 7 (C) 8 (D) 9 (E) 10

13. The solid in the picture was made by sticking eight equal cubes together. How does this solid look from above?

Bongkah yang ditunjukkan dalam gambarajah berikut diperoleh dengan mencantumkan 8 kiub yang serupa. Apakah rupa bongkah ini dari atas?

图中的立体是由八个相同大小的立方体粘成的。请问这立体从上方看是怎么样子的？

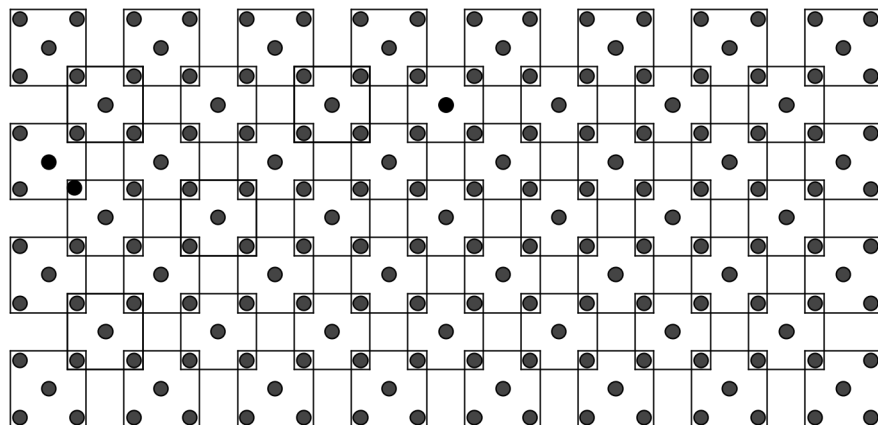


- (A) (B) (C) (D) (E)

14. How many dots are there in this picture?

Berapakah bilangan titik dalam gambarajah berikut?

图中共有多少点？



- (A) 180 (B) 181 (C) 182 (D) 183 (E) 265

15. On Kangaroo planet each kangyear has 20 kangmonths and each kangmonth has 6 kangweeks. How many kangweeks are there in one quarter of a kangyear?

Di planet Kangaroo, setiap “tahun kang” mengandungi 20 “bulan kang” dan setiap “bulan kang” mengandungi 6 “minggu kang”. Berapakah bilangan “minggu kang” di dalam satu perempat “tahun kang”?

在袋鼠星球上，每一个袋鼠年有20个袋鼠月，而每个袋鼠月有6个袋鼠星期。请问四分之一的袋鼠年中有多少个袋鼠星期？

- (A) 9 (B) 30 (C) 60 (D) 90 (E) 120

16. Eve arranged cards in a line as it is shown in the figure below. At each move Eve is allowed to interchange any two cards. What is the smallest number of moves Eve needs to get the word KANGAROO?

Eve menyusun beberapa kad dalam satu baris seperti dalam gambarajah berikut. Pada setiap langkah, Eve dibenarkan untuk saling menukar mana-mana dua kad. Berapakah bilangan langkah minimum yang Eve perlukan untuk menghasilkan perkataan KANGAROO?

Eve把卡片排成一行（如图）。Eve每移动一次卡都只可互换任何两张卡的位子。若Eve要把卡排成KANGAROO这个字，最少需移多少次？

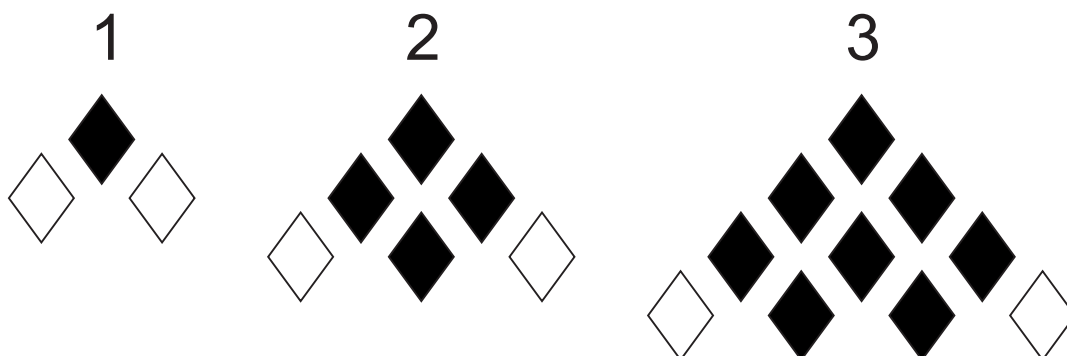


- (A) 2 (B) 3 (C) 4 (D) 5 (E) 6

17. A sequence of triangles of diamonds is made. The first three stages are shown. In each stage a line of diamonds is added. In the bottom line the outer diamonds are white. All other diamonds in the triangle are black. How many black diamonds has the figure in stage 6?

Suatu jujukan segitiga dibina menggunakan bentuk “diamond”. Tiga langkah pertama ditunjukkan. Pada setiap langkah satu baris “diamond” ditambahkan. Pada barisan yang terakhir, “diamond” yang terletak di hujung diwarnakan putih. Kesemua “diamond” yang lain diwarnakan hitam. Berapakah bilangan “diamond” hitam pada langkah ke-6?

有一序列由菱形排成的三角形。前三个阶段已显示（如图）。每个阶段将加入一行菱形。底行最外面的菱形是白色的，而其它则是黑色的。请问在第六阶段时共有多少个黑色的菱形？



- (A) 19 (B) 21 (C) 26 (D) 28 (E) 34

18. Write each of the numbers 0, 1, 2, 3, 4, 5, 6 in the squares to make the addition correct. Which digit will be in the grey square?

Tuliskan setiap nombor 0, 1, 2, 3, 4, 5, 6 dalam petak-petak berikut supaya penambahan berikut sah. Digit apakah yang terletak dalam petak kelabu?

把每个数字0, 1, 2, 3, 4, 5, 6放进格中使加法正确。哪个数字会在灰格中?

$$\begin{array}{r}
 \square\square \\
 + \square\square \\
 \hline
 \square\square\square
 \end{array}$$

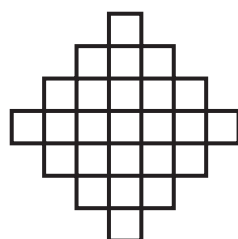
- (A) 2 (B) 3 (C) 4 (D) 5 (E) 6

19. What is the largest number of small squares which can be shaded so that no square made of four shaded small squares appears on the figure?



Berapakah bilangan petak kecil yang boleh diwarnakan supaya tiada petak  yang dibentuk dari empat petak kecil berwarna dalam gambarajah tersebut?

请问最多可涂黑多少个图中的小方格并使得由四个小灰格组成的正方形  没有出现在图中?



- (A) 18 (B) 19 (C) 20 (D) 21 (E) 22

20. Nick has written each of the numbers from 1 to 9 in the cells of the 3×3 table. Only four of these numbers can be seen in the figure. Nick has noticed that for the number 5 the sum of the numbers in the neighbouring cells equals 13 (neighbouring cells are cells sharing sides). He noticed the same applies for the number 6. Which number has Nick written in the shaded cell?

Nick telah menulis setiap nombor daripada 1 hingga 9 di dalam petak-petak pada jadual bersaiz 3×3 . Hanya empat nombor tersebut yang dapat dilihat dalam gambarajah. Nick mendapati bahawa untuk petak bernombor 5, hasil tambah nombor-nombor dalam semua petak yang bersebelahan dengannya bersamaan dengan 13 (petak-petak yang bersebelahan adalah petak-petak yang berkongsi sisi yang sama). Nick mendapati bahawa perkara yang sama juga berlaku untuk petak bernombor 6. Nombor apakah yang ditulis oleh Nick di dalam petak yang digelapkan?

Nick在一个 3×3 的表里填写1至9的数字，图中可见其中四个数字。Nick发现数字5的相邻格子的数字的和是13（相邻格子即是共享同一个边的格子）。他发现同样的事情也发生在数字6身上。请问Nick应该在灰格中填写什么数字？

1		2
4		3

(A) 5

(B) 6

(C) 7

(D) 8

(E) 9

END OF PAPER