Benjamin

3-Point-Problems

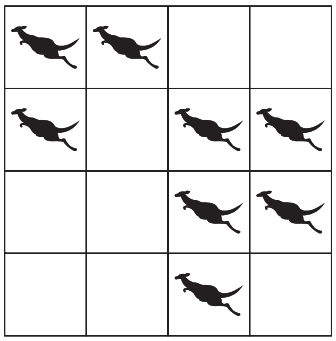
1. (B3.43) What is $2005 \times 100 + 2005$?

(**A**) 2005002005 (**B**) 20052005 (**C**) 2007005
(**D**) 202505 (**E**) 22055

2. (B3.31) Ann and Betty have 10 sweets, but Betty has 2 more than Ann. How many sweets does Betty have?

(**A**) 8 (**B**) 7 (**C**) 6 (**D**) 5 (**E**) 4

3. (B4.44) In the diagram any of the eight kangaroos can jump to another square. What is the least number of kangaroos that must jump so that each row and each column has exactly two kangaroos?



(**A**) 0 (**B**) 1 (**C**) 2 (**D**) 3 (**E**) 4

4. (E3.2) Helga lives with her father, mother, brother and also one dog, two cats, two parrots and four goldfish. How many legs do they have altogether?

(**A**) 22 (**B**) 28 (**C**) 24 (**D**) 32 (**E**) 13

5. (a) **(E3.6)** A butterfly sat down on my correctly solved exercise. What number is the butterfly covering?

$$2005 - 205 = 25 + \square$$

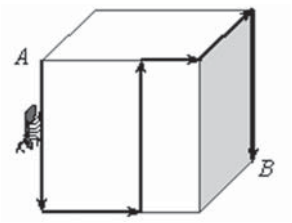
(**A**) 250 (**B**) 1825 (**C**) 2185 (**D**) 1775 (**E**) 1800

5. (b) **(E3.6)** Kanga has correctly solved this exercise. What number is she sitting on?

$$2005 - 205 = 25 + \square$$

(**A**) 250 (**B**) 1825 (**C**) 2185 (**D**) 1775 (**E**) 1800

6. (B3.33) The diagram shows a cube with sides of length 12 cm. An ant is walking across the cube's surface from A to B on the route shown. How far does it walk?

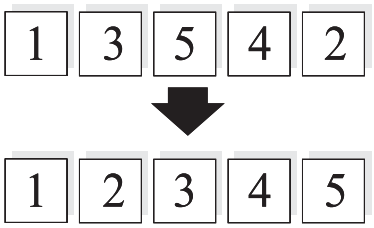


(**A**) 40 cm (**B**) 48 cm (**C**) 50 cm
(**D**) 60 cm (**E**) it is impossible to determine

7. (B3.25) Jane cut a sheet of paper into 10 pieces. Then she took one of the pieces and cut it into 10 pieces also. She repeated this twice more. How many pieces of paper did she have in the end?

(**A**) 27 (**B**) 30 (**C**) 37 (**D**) 40 (**E**) 47

8. (B4.46) The five cards with the numbers from 1 to 5 lie in a horizontal row (see the figure). Per move, any two cards may be interchanged. Find the smallest number of the moves required to arrange all cards in increasing order?

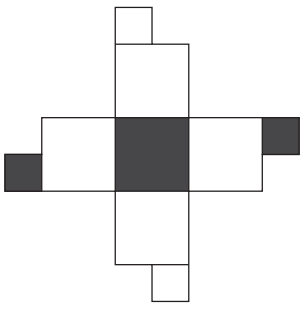


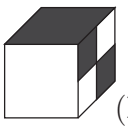
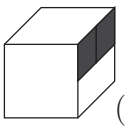
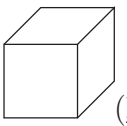
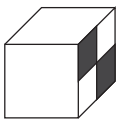
(**A**) 1 (**B**) 2 (**C**) 3 (**D**) 4 (**E**) 5

9. (BNP.34) Vesna chose a whole number and multiplied it by 3. Which of the following numbers could not be her answer? (*Remark: Perhaps smaller numbers are better.*)

(**A**) 103 (**B**) 105 (**C**) 204 (**D**) 444 (**E**) 987

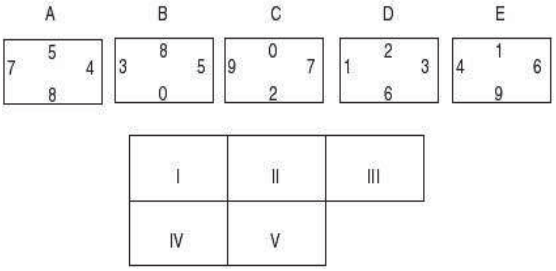
10. (B4.59) If you fold up the net on the right, which of these cubes can you make?



(**A**)  (**B**)  (**C**)  (**D**)  (**E**) 

4-Point-Problems

11. (B4.54) In the picture five congruent rectangles are drawn where each of the sides is labelled with an integer. These rectangles are placed without rotating or flipping them into the positions I through V shown, in such a way that labels on sides which touch each other are equal. Which of the rectangles should be placed into position I?

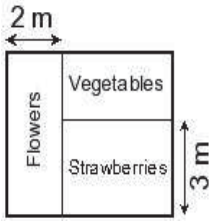


(**A**) A (**B**) B (**C**) C (**D**) D (**E**) E

12. (B3.26) Mowgli needs 40 minutes to walk from home to the sea by foot and to return home on an elephant. When he rides both ways on an elephant, the journey takes 32 minutes. How long would the journey last, if he would walk both directions?

(**A**) 24 minutes (**B**) 42 minutes (**C**) 46 minutes
(**D**) 48 minutes (**E**) 50 minutes

13. (B4.32) In the diagram you see the rectangular garden of Green's family. It has an area of 30 m^2 and is divided into three rectangular parts. One side of the part where flowers are growing has a length of 2m. Its area is 10 m^2. The part with strawberries has one side of length 3 m. What is the area of the part where vegetables are growing?

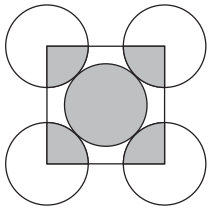


(**A**) 4 m^2 (**B**) 6 m^2 (**C**) 8 m^2 (**D**) 10 m^2 (**E**) 12 m^2

14. (B3.12) How many hours are there in half of a third of a quarter of a day?

(**A**) $\frac{1}{3}$ (**B**) $\frac{1}{2}$ (**C**) 1 (**D**) 2 (**E**) 3

15. (B4.65) In the diagram, you see five circles of the same radii touching each other. A square is placed such that its vertices coincide with the centres of the four outer circles. Then the ratio between the area of the shaded parts of the circles altogether and the area of the unshaded parts of all the circles is



(**A**) 1 : 3 (**B**) 1 : 4 (**C**) 2 : 5 (**D**) 2 : 3 (**E**) 5 : 4

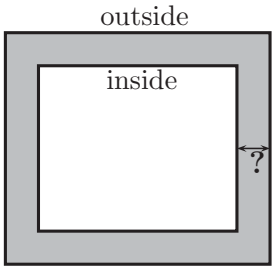
16. If the sum of five consecutive positive integers is 2005, then the largest of these numbers is

(**A**) 401 (**B**) 403 (**C**) 404 (**D**) 405 (**E**) 2001

17. (B3.7) How many different factors (including 1 and 100) does 100 have?

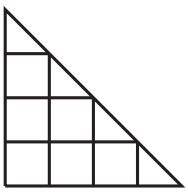
(**A**) 3 (**B**) 6 (**C**) 7 (**D**) 8 (**E**) 9

18. (BNP.13) Around a rectangular garden there is a path which has everywhere the same width. The outside perimeter of the path is 8m longer than the inside perimeter. What is the width of the path?



(**A**) 1m (**B**) 2m (**C**) 4m
(**D**) 8m (**E**) depends on the size of the garden

19. (B3.35) If you count the number of all possible triangles and the number of all possible squares in the picture how many more triangles than squares do you find?



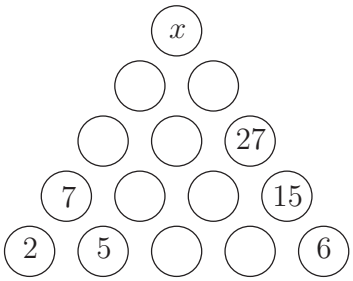
(**A**) 1 (**B**) 2 (**C**) 3
(**D**) 4 (**E**) the same quantity

20. In a trunk there are 5 chests, in each chest there are 3 boxes, and in each box there are 10 gold coins. The trunk, the chests, and the boxes are locked. How many locks must be opened in order to get 50 coins?

(**A**) 5 (**B**) 6 (**C**) 7 (**D**) 8 (**E**) 9

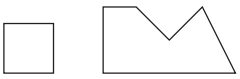
5-Point-Problems

21. (B3.18) Which number should replace x if the diagram is filled with whole numbers according to one fixed rule?

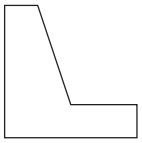
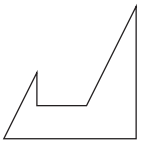
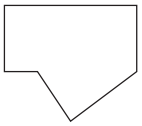
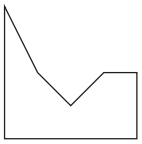
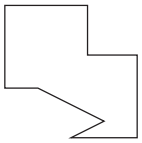


(**A**) 32 (**B**) 50 (**C**) 55 (**D**) 82 (**E**) 100

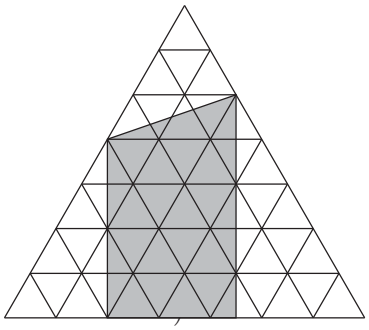
22. (BNP.21) A square piece of paper has been cut in 3 pieces. Two of them are



What is the shape of the third one?

(**A**)  (**B**)  (**C**)  (**D**)  (**E**) 

23. (BNP.28) In the picture the small equilateral triangles have an area of 1 unit. What is the area of the shaded region?

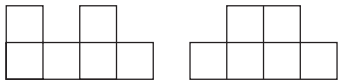


(**A**) 20 (**B**) $22,5$ (**C**) $23,5$ (**D**) 25 (**E**) 32

24. Peter has a three-digit code lock. He has forgotten the code but he knows that all three digits are different, and that the first digit is equal to the square of the quotient of the second and third digit. How many combinations will Peter have to try in order to crack the code?

(**A**) 1 (**B**) 2 (**C**) 3 (**D**) 4 (**E**) 8

25. (B4.5) There is a building made of small cubes of the same size on the table. If we look at it from the front and from the right we see the figures shown in the diagram. What is the largest number of cubes that can be used to make this building?

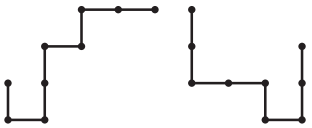


(**A**) 6 (**B**) 8 (**C**) 12 (**D**) 20 (**E**) 24

26. (B4.23) From noon till midnight Clever Cat is sleeping under the oak tree, and from midnight till noon he is awake telling stories. Above him there is a poster on the oak tree saying: „Two hours ago Clever Cat was doing the same thing as he will be doing in an hour's time." How many hours a day does the poster tell the truth?

(**A**) 6 (**B**) 12 (**C**) 18 (**D**) 3 (**E**) 21

27. (B3.13) Each of these two pieces of wire is made of 8 segments of length 1. One of the pieces is placed on top the other so that they coincide partially. What is the largest possible length they have in common?

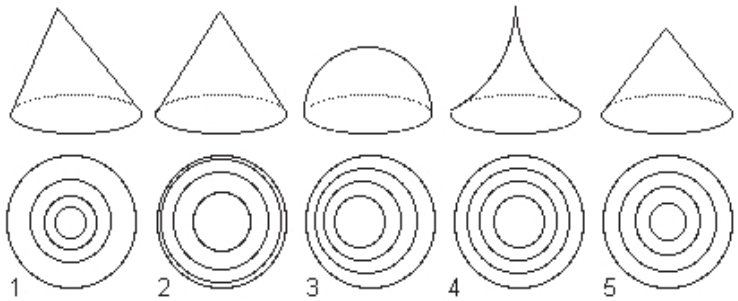


(**A**) 2 (**B**) 3 (**C**) 4 (**D**) 5 (**E**) 6

28. Harrie looked at his digital watch at 21:15 yesterday evening. He noticed that the time shown had the property that when you place a mirror on the two dots then you'll still can see the correct time. How many times a day you can see a time with this property?

(**A**) 1 (**B**) 3 (**C**) 7 (**D**) 11 (**E**) 24

29. (B4.58) In kangarooland we have some strange mountains. You can see them below in the first line. On the second line maps with contour lines of all these mountains are drawn (these are the outlines of the section of the mountains when cutting it by horizontal planes). Starting with the bottom contour the height between adjacent contours is chosen to be always the same. By some mistake the contour lines came out of order. Can you find the correct ordering? (*Remark: Perhaps skip the 5th solid, make first and second steeper.*)



(**A**) 34125 (**B**) 35214 (**C**) 34215 (**D**) 13254 (**E**) 32415

30. Molly, Dolly, Sally, Elly and Kelly are sitting on a park bench. Molly is not sitting on the far right and Dolly is not sitting on the far left. Sally is not sitting at either end. Kelly is not sitting next to Sally and Sally is not sitting next to Dolly. Elly is sitting to the right of Dolly, but not necessarily next to her. Who is sitting at the far right end?

(**A**) cannot be determined (**B**) Dolly (**C**) Sally

(**D**) Elly (**E**) Kelly