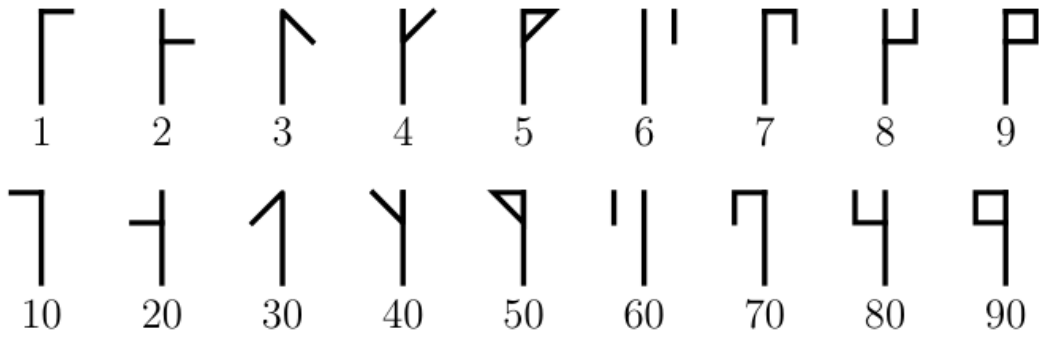# EKAdemy

Subject: Kangaroo Math Practice Level 5 and 6
Maximum Points: 79
**Time Allowed: 60 minutes.**

Section A: 3 Point Problems

1. Cistercian numerals were used in the early thirteenth century. Any integer from 1 to 99 can be represented by a single glyph formed by combining two of the glyphs shown below.

The glyph for 24 looks like , the glyph for 81 looks like , and the glyph for 93 looks like .
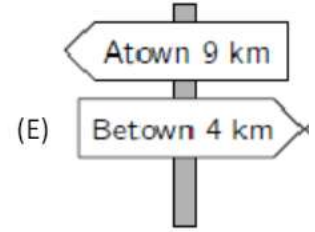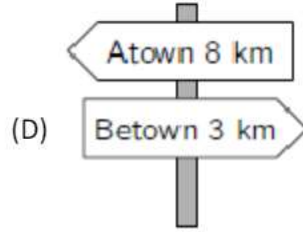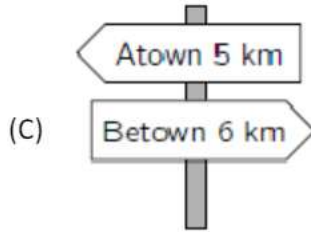What does the glyph for 45 look like?
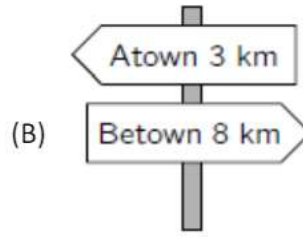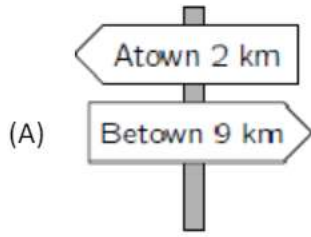

(A)   (B)   (C)   (D)   (E)

2. Which piece completes the pattern?
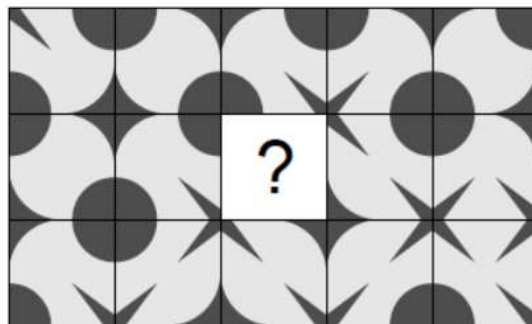
(A)   (B)   (C)   (D)   (E)

3. As Amira is walking from Atown to Betown she passes the five signposts shown. One of them is incorrect. Which one?

(A) Atown 2 km / Betown 9 km

(B) Atown 3 km / Betown 8 km

(C) Atown 5 km / Betown 6 km

(D) Atown 8 km / Betown 3 km

(E) Atown 9 km / Betown 4 km

4. How many of the following four numbers 2, 20, 202, 2020 are prime?
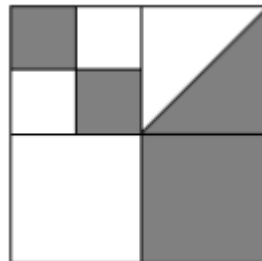
(A) 0   (B) 1   (C) 2   (D) 3   (E) 4

5. The diagram shows a shape made up of 36 identical small triangles. What is the smallest number of such triangles that could be added to the shape to turn it into a hexagon?
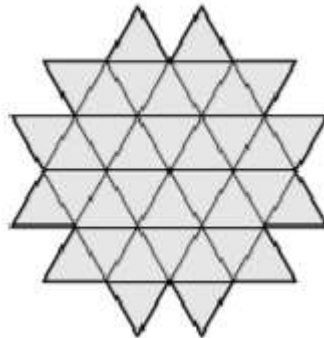
(A) 10   (B) 12   (C) 15   (D) 18   (E) 24

6. A large square is divided into smaller squares. In one of the squares a diagonal is also drawn. What fraction of the large square is shaded?

(A) $\dfrac{4}{5}$ (B) $\dfrac{3}{8}$ (C) $\dfrac{4}{9}$ (D) $\dfrac{1}{3}$ (E) $\dfrac{1}{2}$

7. Four baskets contain 1, 4, 6 and 9 apples respectively. How many apples should be moved between the baskets to have the same number of apples in each basket?

(A) 3   (B) 4   (C) 5   (D) 6   (E) 7

Section B: 4 Point problems

8. The figure below shows a honeycomb with 16 cells. Some of the cells contain honey. The number in each cell indicates how many of its neighbouring cells contains honey. Two cells are neighbours if they share a common edge. How many cells in the honeycomb contain honey?
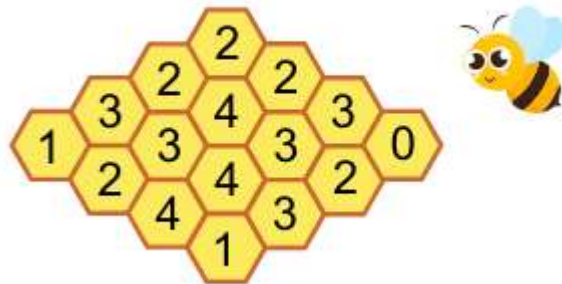
(A) 7   (B) 8   (C) 9   (D) 10   (E) 11

9. Carolina baked a cake and cut it into ten equal pieces. She ate one piece and then arranged the remaining pieces evenly, as shown. What is the measure of the angle between any two adjacent pieces?
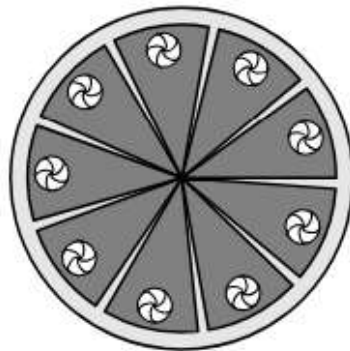
(A) 5°   (B) 4°   (C) 3°   (D) 2°   (E) 1°

10. Rosa wants to start at the arrow, follow the line, and get out at the other arrow. Which piece, if placed in the middle, cannot produce this? Note: The piece can be rotated.
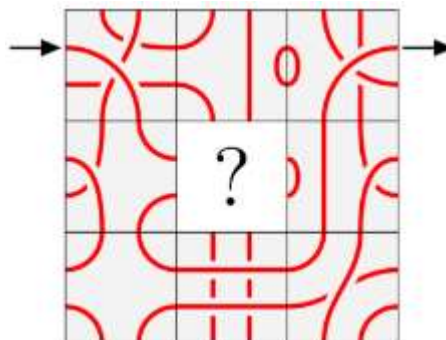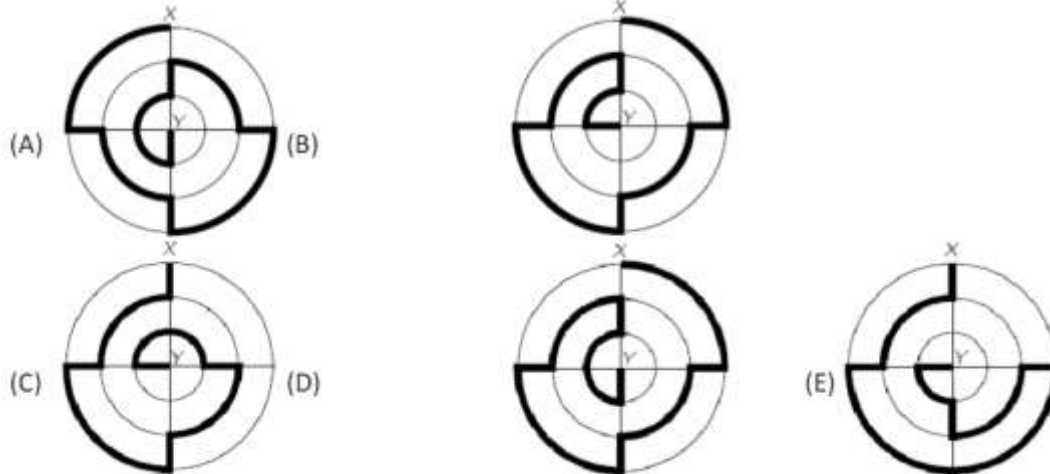
(A)   (B)   (C)   (D)   (E)

11. Annie the Ant started at the left end of a pole and crawled 2/3 of its length. Bob the Beetle started at the right end of the same pole and crawled 3⁄4 of its length. What fraction of the length of the pole are Annie and Bob now apart?
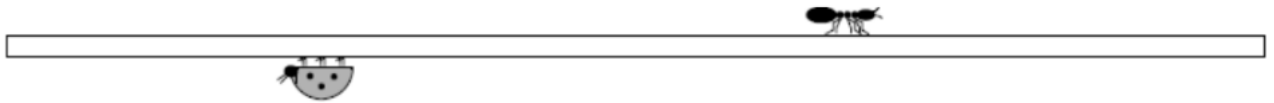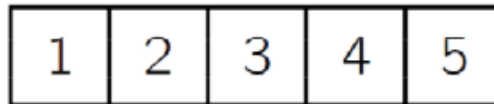

A) 3/8   B) 1/12   C) 5/7   D) 1/2   E) 5/12

12. The diagrams show five paths from X to Y marked with a thick line. Which path is the shortest?

13. Aisha has a strip of paper with the numbers 1, 2, 3, 4 and 5 written in five cells as shown. She folds the strip so that the cells overlap, forming 5 layers.

Which of the following configurations, from top layer to bottom layer, is it not possible to obtain?

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

14. A father kangaroo lives with his three children. They decide on all matters by vote, and each member of the family gets as many votes as its age. The father is aged 36 and the children are 13, 6 and 4 years old, so the father always wins. How many years will it take for the children to win all votes, if they all agree?

(A) 5   (B) 6   (C) 7   (D) 13   (E) 14
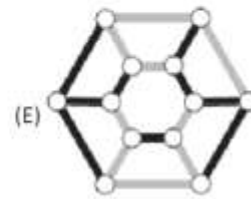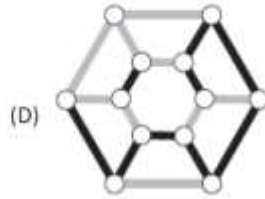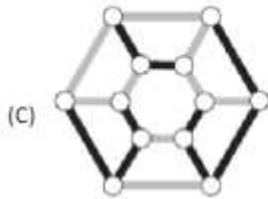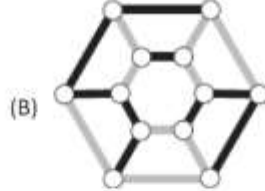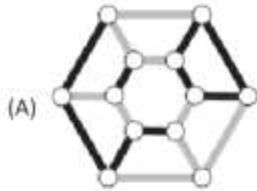
Section C: 5 Point problems

15. Some glasses are stacked on top of each other. A stack of 8 glasses is 42 cm high and a stack of 2 glasses is 18 cm high. How high is a stack of 6 glasses?

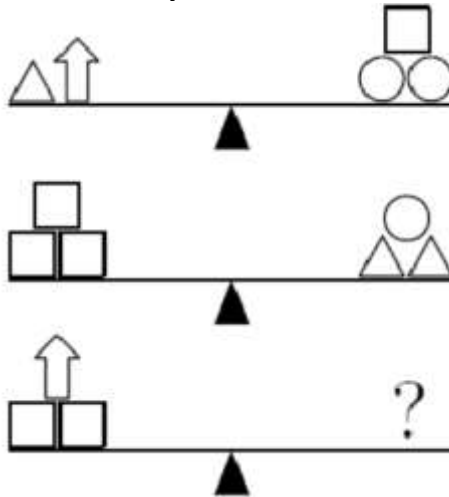(A) 22 cm   (B) 24 cm   (C) 28 cm   (D) 34 cm   (E) 40 cm

16. What does the object in the picture look like when viewed from above?

(A) (B)

(C) (D) (E)

17. Which of the following options will definitely balance the third scale?
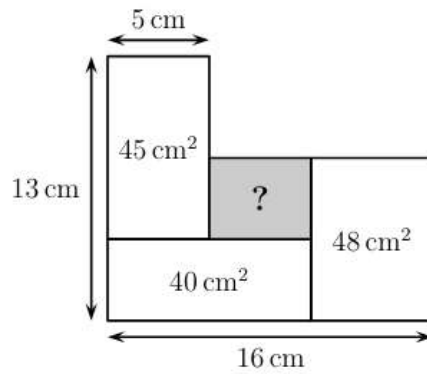

(A) △△△△□

(B) △△△○

(C) △○○○

(D) △□□□□

(E) ○○□

18. We call a 3-digit number nice if its middle digit is greater than the sum of its first and last digits. What is the largest possible number of consecutive nice 3-digit numbers?

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

19. The diagram shows four touching rectangles. What is the area of the shaded rectangle?

5 cm

45 cm²

13 cm

?

48 cm²

40 cm²

16 cm

(A) 12 cm²   (B) 14 cm²   (C) 16 cm²   (D) 18 cm²   (E) 20 cm²

20. Five balls, A, B, C, D, and E, weigh 30 g, 50 g, 50 g, 50 g, and 80 g each, not necessarily in that order. Which ball weighs 30 g?

A) A   B) B   C) C   D) D   E) E

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