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Middle Primary Division Round 2

Questions 1 to 5, 4 marks each

1. When 86 is divided by a number, the remainder is 6. Which of following cannot be the value of that number?

(A) 10 (B) 20 (C) 30 (D) 40 (E) 80

Answer: _____

2. Edmond was one of 14 athletes in the track-and-field team. They are numbered from 1 to 14. The sum of the numbers of the other 13 athletes is 100. What is Edmond's number?

(A) 5 (B) 7 (C) 11 (D) 14 (E) 17

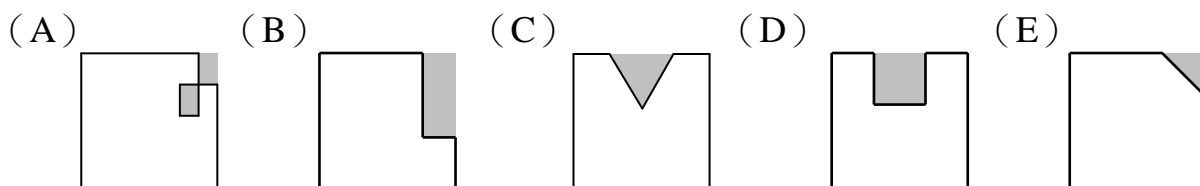
Answer: _____

3. A department store sells three different gift items costing 30 dollars, 60 dollars and 90 dollars, and three kinds of gift boxes costing 20 dollars, 50 dollars and 80 dollars. Helen buys one gift item and a gift box. How many different values can her total bill be?

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

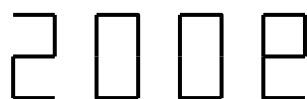
Answer: _____

4. The diagram below shows five squares of equal size. The shaded part of each is removed. Of the resulting figures, whose perimeter is equal to the perimeter of the uncut square?



Answer: _____

5. A man standing upside down saw in a mirror a woman wearing a shirt with a number as shown below. What is the actual number on the woman's shirt?



(A) 2009 (B) 2006 (C) 5006 (D) 5009 (E) 6005

Answer: _____

Questions 6 to 13, 5 marks each

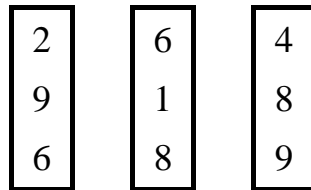
6. The weight of box A is four times the weight of box B. Box A is heavier than box B by 12 kg. What is the weight of box A in kg?

Answer: _____ kg

7. The distance between Mark's home and the park is 3000 m. Mark walked from his home to the park at a speed of 100 m per minute and then walked back home at a speed of 150m per minute. What is Mark's average speed in meter per minute?

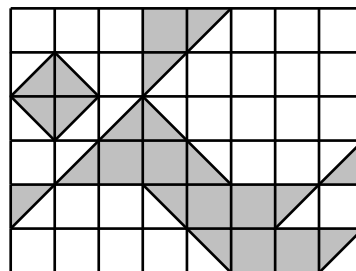
Answer: _____ m per minute

8. There are three 1 by 3 cards, each containing three digits in a vertical column. If these three cards are placed side by side as shown in the diagram below, we can read off three three-digit numbers: 264, 918 and 689. What is the smallest three-digit number that can be obtained by rearranging the order of the cards?



Answer: _____

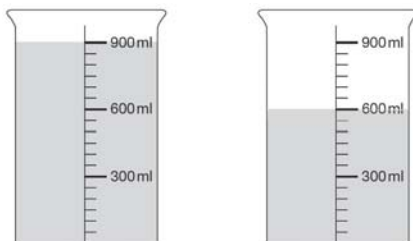
9. In the 6×8 square grid, each square is 1 cm^2 , what is the shaded area, in cm^2 ?



Answer: _____ cm^2

MP 3

10. The diagram shows two identical graduated cylinders of capacity 900 ml, each containing some water. In order for both cylinders to contain the same amount of water, how much water should be poured from the cylinder on the left into the cylinder on the right?



Answer: _____ ml

11. Observe the following pattern:

$$\frac{29}{40} = 0.725$$

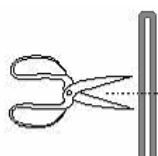
$$\frac{31}{40} = 0.775$$

$$\frac{33}{40} = 0.825$$

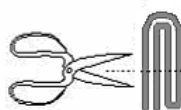
What is the decimal expansion of $\frac{27}{40}$?

Answer: _____

12. The diagram shows that if a rope is folded once and be cut in halves, it will separate into 3 pieces; and if it is folded twice instead, it will separate into 5 pieces. If it is folded 6 times instead, into how many pieces will it separate?



Fold 1 time



Fold 2 times

Answer: _____

13. Andy and Ben started at 7:00AM from town A and jogged along the same road in the same direction. Andy jogged at a constant speed of 6 km/h while Ben jogged at a constant speed of 4 km/h. At 9:00AM, Ben borrowed a bike along the road and rode at a constant speed of 10 km/h. He caught up with Andy at town B. What was the distance between town A and town B?

Answer: _____ km

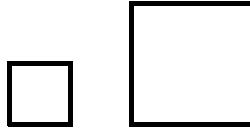
Questions 14 to 15, 20 marks each

(Detailed solutions are needed for these two problems)

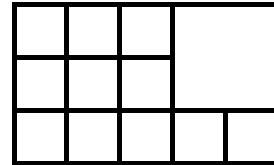
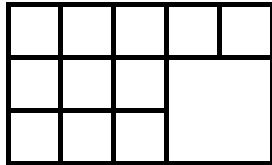
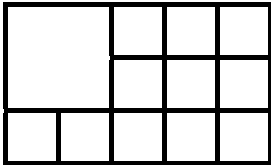
14. The total value of Jerome's 4 coins is 3 dollars less than Roberta's 3 coins. Each is a 1-dollar, 2-dollar or 5-dollar coin, but there are only two different kinds among these 7 coins. What is their minimum total value?

Answer: _____

15. Unlimited numbers of two types of two square cardboard papers are available: side lengths of 1 cm or 2 cm.



Now, we are going to use these two kinds of cardboard paper to assemble a rectangular shape with length of 5 cm by 3 cm. How many different ways can we make such kind of rectangular shape paper? (rotating and flipping of each other to make a rectangular paper is considered the same way of making the rectangular paper. For example, the following three rectangular pieces of paper is the same way of making a new rectangular pieces of paper, because the first rectangular piece of paper becomes the second piece through a clockwise rotation of 90 degrees and the third piece can be obtained from the second piece by flipping it upside down)



Answer: _____
