

Mathlete Training Centre
WMI 2022 GRADE 6A

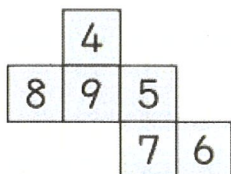
1. If $P = 15 \times 25 \times 35 \times 45 \times 55$, how many prime factors does P have?

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

2. If the radius of the large circle is x times the radius of the small circle, how many times is the circumference of the large circle than the circumference of the small circle?

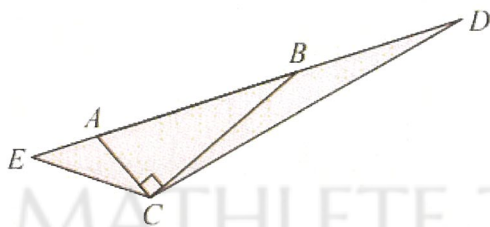
(A) x (B) $2 \times x$ (C) $x \times x$ (D) $\frac{1}{x}$

3. Fold the figure below into a cube, and find the minimum sum of the numbers on two opposite faces.



- (A) 11 (B) 13 (C) 10 (D) 14

4. As shown in the picture. If $\angle BCA = 90^\circ$, $\overline{BC} = \overline{BD}$, $\overline{AE} = \overline{AC}$, and E, A, B and D are on the same line, find $\angle DCE$.



- (A) 120° (B) 135° (C) 145° (D) 150°

5. Using a 360cm long rope to make a square and a rectangle whose ratio of its length to its width is 4:1. If the two shapes have the same area, find the difference between the two perimeters in cm .

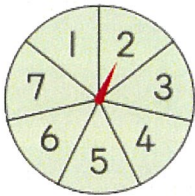
(A) 20 (B) 30 (C) 40 (D) 60

6. Below shows the math test result of eight students. The perfect score is 100 points, and the average score is 68 points. Suppose Frank's score is the highest of the eight, and he gets twice of the points that one of the seven other students gets. How many points does Chris get?

Alex	Ben	Chris	Debby	Elsa	Frank	Gill	Helen
76	48		90	35		54	82

(A) 70 (B) 63 (C) 53 (D) 51

7. Make the clock hand spin. What is the probability that it stops at an even number which is larger than 3?

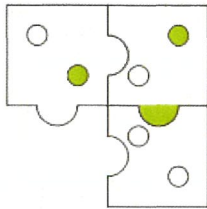


- (A) $\frac{1}{7}$ (B) $\frac{1}{2}$ (C) $\frac{2}{7}$ (D) $\frac{4}{7}$

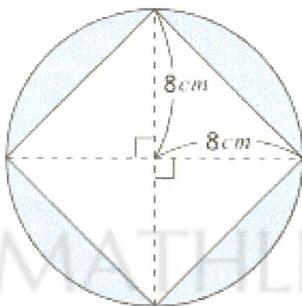
8. In the magic school, there are 40 three legged cats (each with 1 head and 3 feet) and four legged snakes (each with 1 head and 4 feet) in total. When all four legged snakes use two of their feet as hands, the number of feet of three legged cats are 6 times the number of feet of four legged snakes. Find the original number of feet in total.

- (A) 135 (B) 132 (C) 130 (D) 128

9. Which option below makes the right figure a line-symmetrical figure?



10. Look at the picture. Round the number of the shaded area in cm^2 to the nearest integer. (Use $\pi = 3.14$)



- (A) 64 (B) 70 (C) 72 (D) 73

11. Given a bottle of 60% orange juice. After 100ml of water is added, the concentration becomes 40%. How many more *ml* of water are needed to make the concentration 10%?
(A) 1000 (B) 900 (C) 300 (D) 200

12. Alex, Bob, and Carter play Rock, Paper, Scissors once at the same time. If Alex can only play scissors and paper, Bob can only play rock and paper, find the probability that only Alex wins.
(A) $\frac{1}{2}$ (B) $\frac{1}{3}$ (C) $\frac{1}{6}$ (D) $\frac{1}{9}$

13. Given 7 integers. Their mean, median, the only mode, and range are all 7. Among these 7 integers, which option below cannot be the smallest number?
- (A) 2 (B) 4 (C) 5 (D) 6

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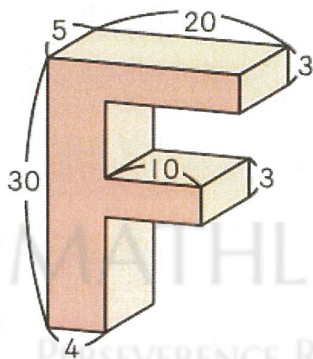
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14. A vaccine factory planned to make 4800 ten thousand vaccines in 30 days. The progress in the actual production is better than expected. If 40 ten thousand more vaccines are produced per day than the original plan, the production can be completed 6 days earlier. If 80 ten thousand more vaccines are produced per day than the original plan, the production can be completed 10 days earlier. How many days does the original plan take?
- (A) 36 (B) 30 (C) 26 (D) 24

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15. Find the volume of this composite rectangular cylinder in this picture. (All the angles are right angles)



- (A) 1050 (B) 1000 (C) 990 (D) 960