

Choose the correct answer. Mark your answer on the sheet provided.

- 1) The ratio of boys to girls in a class is 3 : 2. Today there are 12 boys in the class. Tomorrow 2 new boys will be enrolled. The ratio of boys to girls will then be
 (A) 5 : 2 (B) 7 : 1 (C) 7 : 4 (D) 7 : 9
- 2) A motor car travels 6.25 km on 1 litre of fuel. How many litres is this per 100 km?
 (A) 0.0625 (B) 0.16 (C) 16 (D) 625
- 3) The price of houses has increased by 40% in the last 8 years. A family bought a house this year and paid \$364 000. What was the price of the house 8 years ago?
 (A) \$146 000 (B) \$218 400
 (C) \$260 000 (D) \$509 600
- 4) A tap is dripping at the rate of 5 mL per minute. How many litres would this amount to in one year (365 days)?
 (A) $5 \times 60 \times 24 \times 365 \times 1000$ (B) $\frac{5 \times 1000}{60 \times 24 \times 365}$
 (C) $\frac{60 \times 24 \times 365}{5 \times 1000}$ (D) $\frac{5 \times 60 \times 24 \times 365}{1000}$
- 5) Light travels at a speed of 3×10^8 metres per second. The number of kilometres that light travels in 1 hour is
 (A) 1.08×10^7 (B) 1.08×10^9
 (C) 1.08×10^{10} (D) 1.08×10^{12}
- 6) In a race, the total prize-money is shared among the first three placegetters in the ratio 5 : 3 : 2. Third prize is \$300. What is the total prize-money?
 (A) \$150 (B) \$750 (C) \$1500 (D) \$3000
- 7)

OLD MEDALS



Ratio of radii 1 : 1
 Ratio of thickness 1 : 1
 Ratio of masses 2 : 1

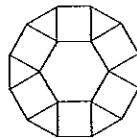
NEW MEDALS



Ratio of radii 2 : 1
 Ratio of thickness 2 : 1
 The ratio of the mass of a new gold medal to the mass of a new silver medal is
 (A) 2 : 1 (B) 4 : 1 (C) 8 : 1 (D) 16 : 1

- 8) Australia's population is 17.5 million and its surface area is 7.68×10^6 km². The average number of people per square kilometre is approximately
 (A) $\frac{1}{2}$ (B) 2 (C) 23 (D) 134

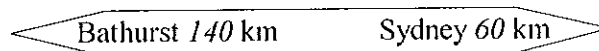
- 9) A plane is loaded with 480 tonnes of fuel. This is 20% more than required for a flight under normal conditions. If the conditions are normal, how much fuel will be used for this flight?
 (A) 96 tonnes (B) 384 tonnes
 (C) 400 tonnes (D) 576 tonnes
- 10) The Luxury Limousine Company charges \$180 per hour to hire a car. If p people hire a car for h hours, the average cost per person (M dollars) is given by
 (A) $M = \frac{180h}{p}$ (B) $M = \frac{180}{ph}$
 (C) $M = 180ph$ (D) $M = \frac{180p}{h}$
- 11) A taxi company charges 90 cents per kilometre plus \$1.80 hiring fee. If the total cost of a journey was \$9.45, how long was the journey?
 (A) 7.45 km (B) 8.5 km (C) 9.43 km (D) 10.5 km
- 12) A speed skater travels 3000 metres in 5 minutes. What is the average speed in kilometres per hour?
 (A) 12 (B) 15 (C) 36 (D) 600
- 13)



In this figure, the ratio of the areas of each triangle, square and hexagon is
 triangle : square : hexagon
 $10 : 23 : 60$

What fraction of the area of the figure is covered by the hexagon?

- (A) $\frac{10}{43}$ (B) $\frac{1}{4}$ (C) $\frac{10}{33}$ (D) $\frac{20}{31}$
- 14) An accountant and a clerk earn salaries in the ratio 7 : 5. The clerk earns \$28 000 each year. How much more than the clerk does the accountant earn?
 (A) \$4000 (B) \$5600 (C) \$8000 (D) \$11 200
- 15) An electronic scanner can mark 8 tests per second. How long will it take to mark 36 000 tests?
 (A) 48 min (B) 1 h 15 min (C) 1 h 25 min (D) 75 h
- 16) An empty diving pool is in the shape of a rectangular prism, 6 metres long and 4 metres wide. Water is flowing into the pool at a rate of 800 litres per hour. The depth of the water after 5 hours is closest to
 (A) 0.17 m (B) 0.6 m (C) 1.67 m (D) 6 m
- 17)



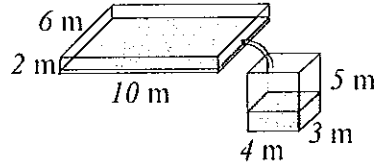
A truck travelling from Sydney to Bathurst at a speed of 75 km/h passes this sign. The driver decides to stop and rest when half the trip is completed. How much longer does he have to wait before stopping?
 (A) 8 min (B) 32 min (C) 84 min (D) 120 min

- 18) Australians eat approximately 120 kg of meat per person each year. The ratio of the different types of meat is

BEEF : LAMB : PORK : POULTRY
 5 : 2 : 1 : 2

The average amount of poultry eaten by one person in a year is approximately
 (A) 12 kg (B) 24 kg (C) 30 kg (D) 60 kg

19)



Water is flowing from the top tank to the bottom tank at a constant rate. The depth of water in the top tank is falling at a rate of 10 centimetres per hour. At what rate is the depth of water rising in the bottom tank?

- (A) 2 cm/h (B) 20 cm/h (C) 25 cm/h (D) 50 cm/h

20)

If $x : y = 1 : 2$ and $x : z = 3 : 5$ then $y : z =$

- (A) 2 : 5 (B) 3 : 10 (C) 5 : 6 (D) 6 : 5

[Answers]

- 1) → C »
 2) → C »
 3) → C »
 4) → D »
 5) → D »
 6) → C »
 7) → D »
 8) → B »
 9) → C »
 10) → A »
 11) → B »
 12) → C »
 13) → A »
 14) → D »
 15) → B »
 16) → A »
 17) → B »
 18) → B »
 19) → D »
 20) → D »