P6 ISMC Sample Questions
Each of the questions 1 to 2 carries 2 marks.
Each of the questions 3 to 4 carries 3 marks.

1.
A shoe shop gave a discount of $3 for every $40 spent.
Aaron bought 2 pairs of shoes and paid $119.
How much did the shoes cost before the discount?

        A. $119
        B. $122
        C. $125
        D. $128
        E. $131

2.
Express 0.8% as a fraction in the simplest form.

        A. $\dfrac{1}{8}$

        B. $\dfrac{1}{25}$

        C. $\dfrac{8}{100}$

        D. $\dfrac{1}{125}$

        E. $\dfrac{8}{1000}$

3.
Raj is $7x$ years old.
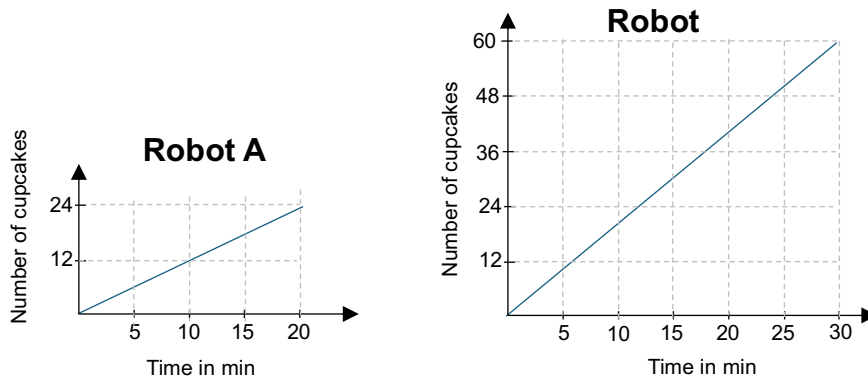Shiwani is $4x + 1$ years older than Tanya.
Raj is x years older than Shiwani.
What is the total age of Raj, Shiwani and Tanya in 5 years' time?

        A. $(12x + 4)$ years old
        B. $(12x + 5)$ years old
        C. $(15x + 4)$ years old
        D. $(15x + 5)$ years old
        E. $(15x + 14)$ years old

4.
Graph A and Graph B show the numbers of cupcakes produced by Robot A and by Robot B respectively.

Robot A

Robot

How long will it take both robots together to produce 160 cupcakes?

    A.   80 mins
    B.   70 mins
    C.   60 mins
    D.   50 mins
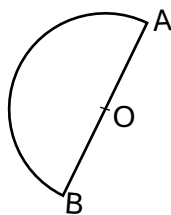   E.   40 mins

Section B
Each of the questions 5 to 7 carries 4 marks.

5.
I start to draw a semicircle as shown in the figure, where O is the centre of the circle and AB is the diameter. Next, I continue to draw a rectangle ABCD such that the length BC is equal to the length of the radius. Find the ratio of the area of the semicircle to the area of the rectangle ABCD.

Take $\pi = \frac{22}{7}$

_____ : _____

6.
Helen paid a total of $120 for a dress at a 20% discount and a pair of shoes at x% discount. The total discount came to $30.
If Helen paid $24 more for the pair of shoes than the dress, find the value of x.

_____ %

7.

How many times do the hour hand and minute hand of a clock make a right angle between 7 a.m. and 10.30 a.m.?
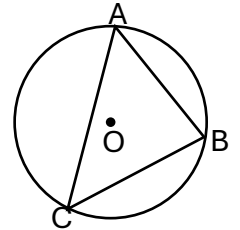
_____ times

Section C

Each of the questions 8 to 9 carries 4 marks.
Each of the questions 10 to 12 carries 5 marks.

8.

ABC is a triangle inside a circle with centre O, where A, B and C are points on the circumference of the circle. Find the value of $\angle OAB + \angle OBC + \angle OCA$.

_____ °

9.

An empty rectangular tank of capacity 240 litres was being filled by Tap A and Tap B at the rate of 8 litres per minute and 6 litres per minute respectively and being drained by Tap C at the rate of 4 litres per minute. Tap A was turned on 15 minutes before Tap B and Tap C, which were turned on together. How much water had drained off by the time the tank was completely filled?
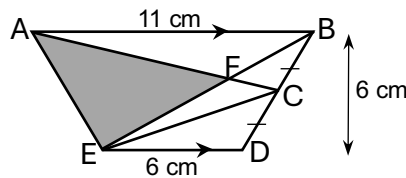
_____ litres

10.

In the figure, AB is parallel to ED.
The ratio of CF to FA is 11 : 40.
Find the area of triangle AEF.

_____ cm²

11.

Three families were given different types of rice in different packages.
Family A received 3 packets of Brand X rice and 1 packet of Brand Y rice.
Family B received 2 packets of Brand Y rice and 3 packets of Brand Z rice.
Family C received 1.5 packets of Brand X rice, 1.5 packets of Brand Y rice, and some Brand Z rice.
If the families receive equal amounts of rice by weight, how much of Brand Z rice did Family C receive?

_____ packet(s)

12.

A tortoise and a rabbit took part in a 1 km race.

The tortoise crawled at a constant speed of 5 m/min.

The rabbit repeated a pattern of hopping and sleeping, hopping and sleeping.

It hopped at a constant speed of 16 m/min for 10 minutes and slept for 30 minutes each time.

a)

The tortoise won the race. How far behind was the rabbit when the tortoise crossed the Finish line?

_____ m

b)

If the rabbit maintained hopping at 16 m/min for 10 minutes each time but wants to win the race, then he has to sleep less after each hopping. At most, how long can the rabbit sleep each time?

Give your answer to the nearest minute.

_____ min

P6 ISMC Sample Questions Answers

Section A:
Each of the questions 1 to 2 carries 2 marks.
Each of the questions 3 to 4 carries 3 marks.

1. D
2. D
3. E
4. D

Section B
Each of the questions 5 to 7 carries 4 marks.

5. 11 : 14
6. 20 %
7. 6 times

Section C
Each of the questions 8 to 9 carries 4 marks.
Each of the questions 10 to 12 carries 5 marks

8.   180 °
9.   48 litres
10. 20 cm^2
11. 1.5 packets of Brand Z
12a. 200 m
   b. 22 min