



2018 PRIMARY 6 SEMESTRAL ASSESSMENT 1

Name: _____ () Date: 11 May 2018

Class: Primary 6 ()

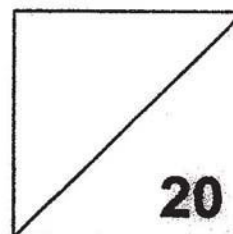
Time: 8.00 a.m. - 9.00 a.m.

Parent's Signature: _____

Marks: _____ / **100**

Paper 1 comprises 2 booklets, A and B.

MATHEMATICS PAPER 1 (BOOKLET A)



INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.
6. You are not allowed to use a calculator.

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.

For each question, four options are given. One of them is the correct answer.

Make your choice (1, 2, 3 or 4).

Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(20 marks)

1. Find the value of $95 - (11 + 4) \div 5 \times 4$.

- (1) 64
- (2) 83
- (3) 368
- (4) 4

2. Subtract 0.34 from 14 tenths.

- (1) 0.20
- (2) 0.48
- (3) 1.06
- (4) 1.74

3. A is thrice of B. B is five times of C. What is the ratio of C to A?

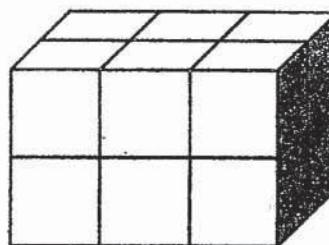
- (1) 1 : 15
- (2) 15 : 1
- (3) 1 : 3
- (4) 3 : 1

4. Su Min was born on 1 July 2007. How old will she be on 1 January 2018?

- (1) 10 years 6 months
- (2) 10 years 7 months
- (3) 11 years 6 months
- (4) 11 years 7 months

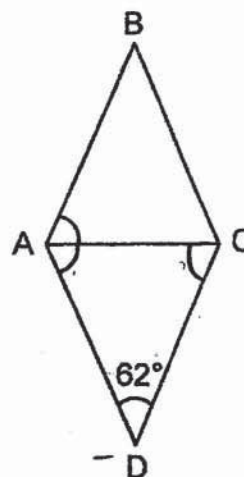
5. Henry made the cuboid shown using 3-cm cubes. What is the volume of the cuboid?

- (1) 107 cm^3
- (2) 162 cm^3
- (3) 243 cm^3
- (4) 324 cm^3

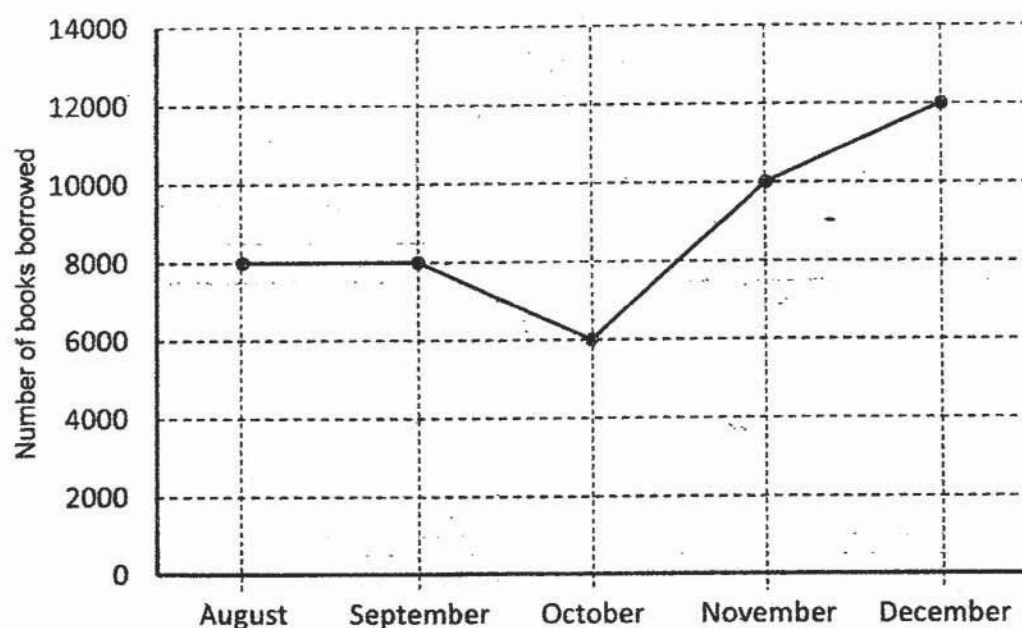


6. ABCD is a rhombus. Find $\angle BAC$.

- (1) 45°
- (2) 59°
- (3) 62°
- (4) 118°



7. The line graph shows the number of books borrowed from a library from August to December.

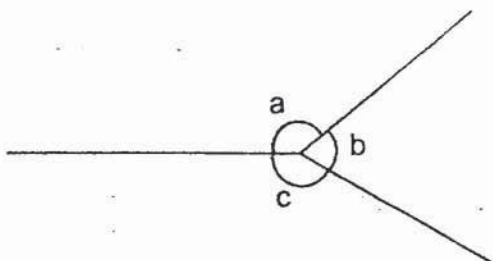


In which 1-month period was there the biggest change in the number of books borrowed?

- (1) Between August and September
 - (2) Between September and October
 - (3) Between October and November
 - (4) Between November and December
8. A farmer planted 9 trees in a row. The trees were planted at the same distance apart. The distance between the first and fourth tree was 12 m. What was the distance between the first tree and the last tree?

- (1) 24 m
- (2) 27 m
- (3) 32 m
- (4) 36 m

9. In the figure below, $\angle a$ is twice of $\angle b$. $\angle c$ is 10° bigger than $\angle a$. Find $\angle c$.



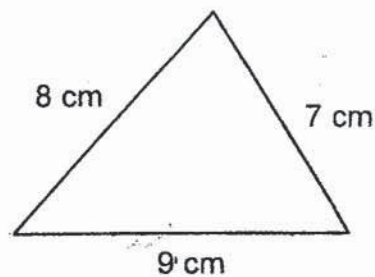
- (1) 158°
 - (2) 150°
 - (3) 78°
 - (4) 70°
10. The average mass of Box A, Box B and Box C is 6 kg.
The mass of Box C is 8 kg. What is the average mass of Box A and Box B?
- (1) 1 kg
 - (2) 2 kg
 - (3) 5 kg
 - (4) 4 kg

11. A shop gave a discount of \$5 for every \$30 spent. Jenny wanted to buy a pillow. The price of the pillow was \$96 before discount. How much did Jenny pay for the pillow?

- (1) \$91
- (2) \$81
- (3) \$80
- (4) \$66

12. The perimeter of the triangle shown is half that of a rectangle. Given that the length of the rectangle is longer than its breadth, how many possible values of the length of the rectangle are there if each length is a whole number?

- (1) 12
- (2) 11
- (3) 10
- (4) 4



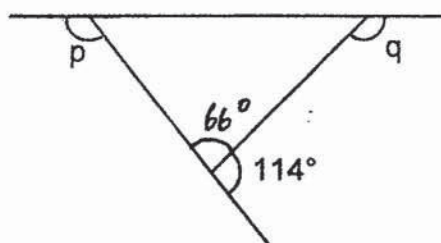
13. Shannon is b years old. Her sister is 4 years younger than her. What is the sum of their ages in 5 years' time?

- (1) $(b + 9)$ years
- (2) $(2b + 14)$ years
- (3) $(2b + 1)$ years
- (4) $(2b + 6)$ years

14. Mr Lim only sells apples in bags of 6. Each bag is sold at \$3. Sally has \$7. How many apples can she buy at most?

- (1) 12
- (2) 2
- (3) 14
- (4) 18

15. In the figure below, not drawn to scale, find the sum of $\angle p + \angle q$.



- (1) 66°
- (2) 114°
- (3) 228°
- (4) 246°

End of Booklet A
Go on to Booklet B



2018 PRIMARY 6 SEMESTRAL ASSESSMENT 1

Name : _____ () Date: 11 May 2018

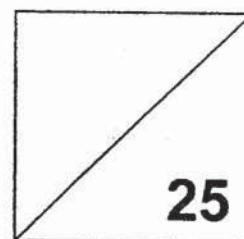
Class : Primary 6 ()

Time: 8.00 a.m. - 9.00 a.m.

Parent's Signature : _____

Paper 1 comprises 2 booklets, A and B.

MATHEMATICS PAPER 1 (BOOKLET B)



INSTRUCTIONS TO CANDIDATE

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.
6. You are **not** allowed to use a calculator.

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided
For questions which require units, give your answers in the units stated. (5 marks)

16. How many sixths are there in $9\frac{2}{3}$?

Ans: _____

17. 1 kg 17 g = _____ kg.

Ans: _____ kg

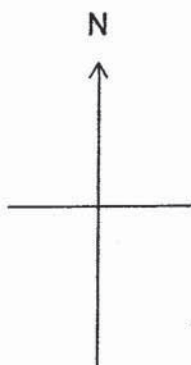
18. Find the value of $3 + \frac{2}{3} - \frac{1}{4}$

Ans: _____

19. Simplify $5a - 8 - 2a + 10$

Ans: _____

20. Muthu is facing the West. He turns anti-clockwise to face North.
What angle has he turned through?



Ans: _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

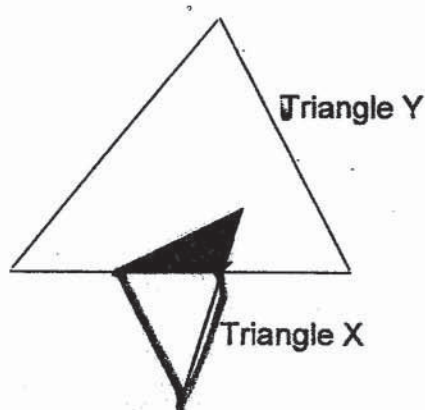
21. The table below shows the parking rates at a car park.

First hour	\$3.00
Every additional half hour or part thereof	\$0.50

Mr Tan parked his car at the car park from 2.20 p.m. to 5.00 p.m. How much did he pay for the parking charges ?

Ans: _____

22. The figure is made up of 2 triangles. Triangle X is $\frac{1}{4}$ the size of Triangle Y. $\frac{1}{3}$ of Triangle X is shaded. What fraction of the figure is shaded?

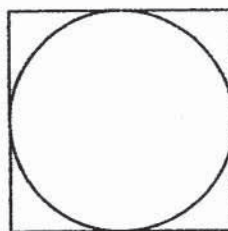


Ans: _____

23. The cost of an oven, inclusive of a 7% GST, is \$321.
What is the cost of the oven before GST?

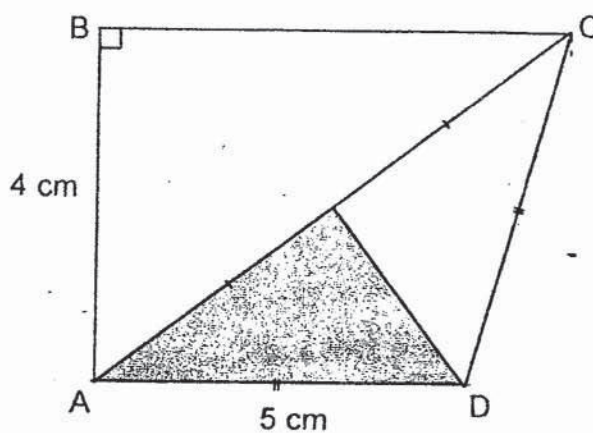
Ans: \$ _____

24. The area of the square shown below is 100 cm^2 .
Find the circumference of the circle inside it. (Take $\pi = 3.14$)



Ans: _____ cm

25. The figure shows a trapezium. Triangle ACD is divided into 2 equal parts. Find the area of the shaded part.



Ans: _____ cm^2

26. A wheel makes 26 revolutions per minute.
How long does it take to make 2340 revolutions ?

Ans: ____ h ____ min

27. There are three types of muffins in a box.
The ratio of the number of vanilla muffins to cheese muffins is 4 : 5.
The ratio of the number of strawberry muffins to the total number of vanilla and cheese muffins is 5 : 6.
What fraction of the muffins in the box are vanilla muffins?

Ans: _____

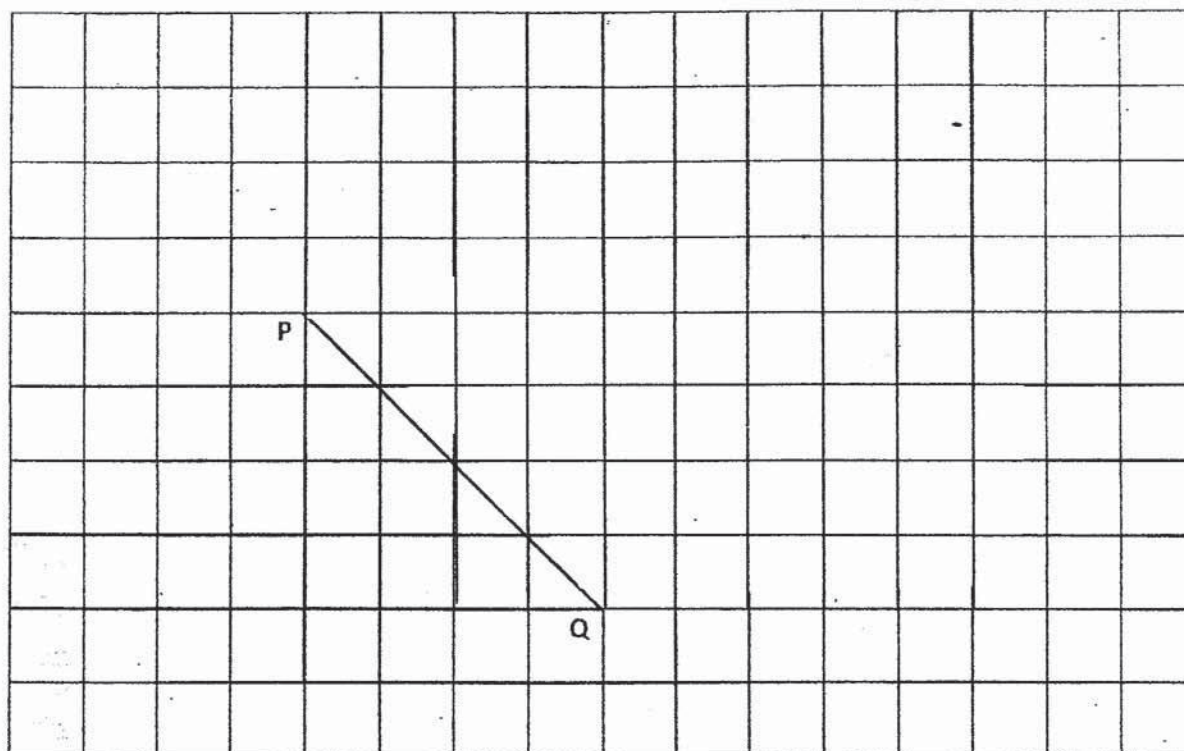
28. Mdm Lee has $\frac{3}{5}$ kg of walnuts. She uses $\frac{1}{6}$ of it to bake some cakes.
What is the mass of walnuts left?

Ans: _____ kg

29. A group of 5 students booked a tennis court for 2 hours.
They took turns to play. Every student played an equal amount of time.
At any time, there were 4 students playing on the court.
On average, how long did each student play on the court ?

Ans: _____ min

30. Use the grid given.
 Draw an isosceles triangle, PQR, such that $\angle PQR = 90^\circ$.
 Measure the length PR.



Ans: PR = _____ cm

End of Booklet B
 End of Paper 1

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

1. Mdm Lee bought 120 fruits.

$\frac{1}{3}$ of the fruits were apples, $\frac{1}{4}$ of the fruits were oranges and the rest were pears.

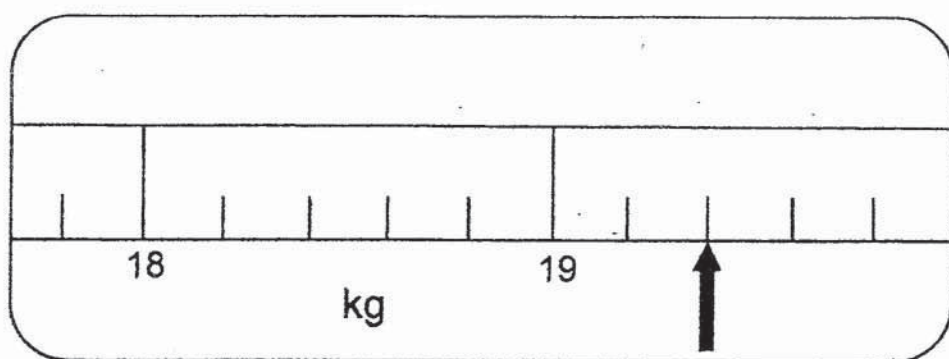
How many pears did Mdm Lee buy?

Ans: _____

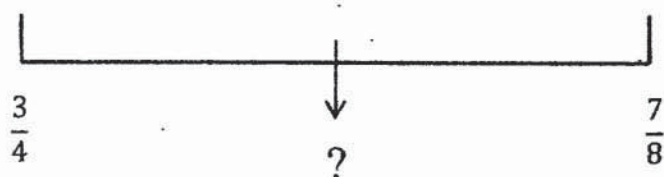
2. There are 60 cookies in a box. 36 of them are chocolate cookies while the rest are almond cookies. What is the ratio of the number of almond cookies to the number of chocolate cookies in the box?

Ans: _____

3. a) What is the reading shown on the scale below?



- b) Find the value that is exactly halfway between $\frac{3}{4}$ and $\frac{7}{8}$.



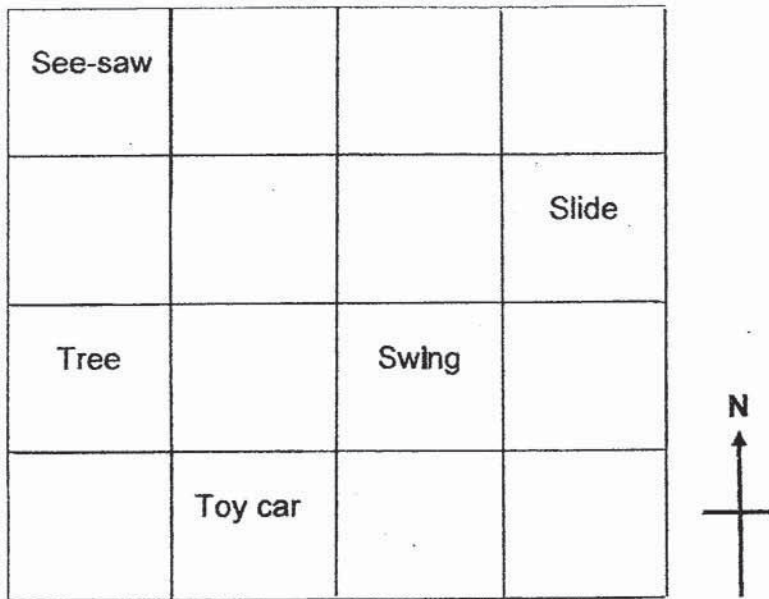
Ans: (a) _____ kg, _____ g

(b) _____

4. Mrs Ng had $4p$ pies. She ate 1 pie and gave p pies to her friends. Mrs Ng's children then ate half of the remaining pies. How many pies had she left?
Express your answer in terms of p in the simplest form.

Ans: _____

5. The square grid below shows the plan of a playground.



- (a) In what direction is the tree from the swing?
- (b) The estate management wants to place a bench in the playground.
 The location of the bench is to be south of the slide and east of the toy car.
 Put a cross (×) in the square where the bench will be placed.

Ans : (a) ____

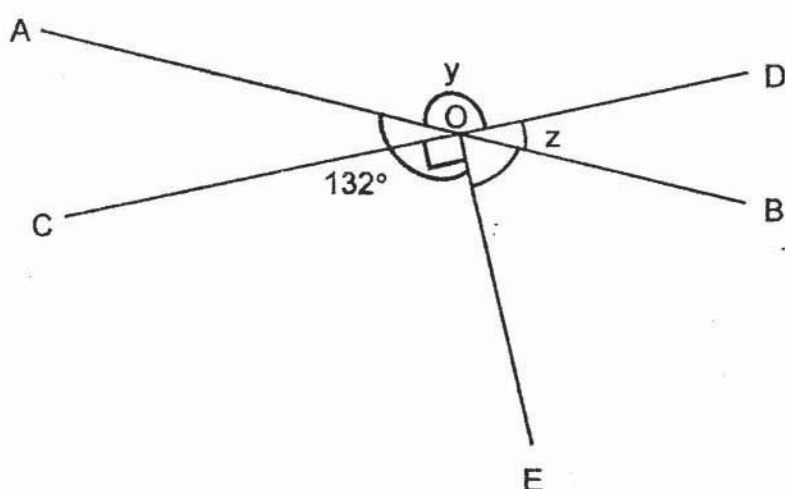
For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question.

(45 marks)

6. In the figure below, AOB and COD are straight lines.

(a) Find $\angle y$.

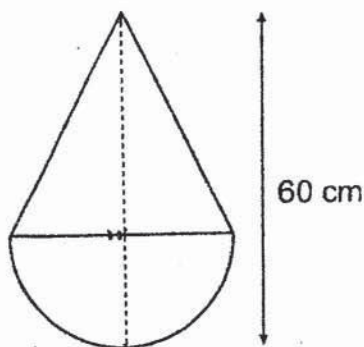
(b) Find $\angle z$.



Ans: (a) _____ [2]

(b) _____ [1]

7. The figure below is made up of an isosceles triangle and a semicircle. The height of the triangle is equal to its base. Find the area of the triangle. (Take $\pi = 3.14$)



Ans: _____ [3]

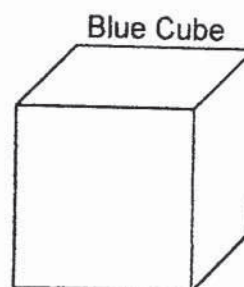
8. 1 kg of cherries cost as much as 1.5 kg of peaches. Mrs Li spent \$54 for 2.5 kg of cherries and 3 kg of peaches. What was the cost of 1 kg of peaches?

Ans: _____ [3]

9. There were 34 more girls than boys in the hall.
The number of boys was 17% less than the number of girls.
How many children were there?

Ans: _____ [3]

10. A blue cube is completely filled with 27 identical red cubes.
Each side of the red cube is 2 cm. Find the volume of the blue cube.



Ans: _____ [3]

11. Jerry wanted to buy a pair of shoes. During a sale, he saw a white pair of shoes on sale at 15% discount and a black pair of shoes at 20% discount. Both pairs of shoes were selling at the same price before the discount. To buy the white pair, Jerry would need \$2.50 more than what he had. Jerry bought the black pair of shoes and had \$2 left after that.
- a) How much did the pair of white shoes cost before the discount?
b) How much money did Jerry have at first?

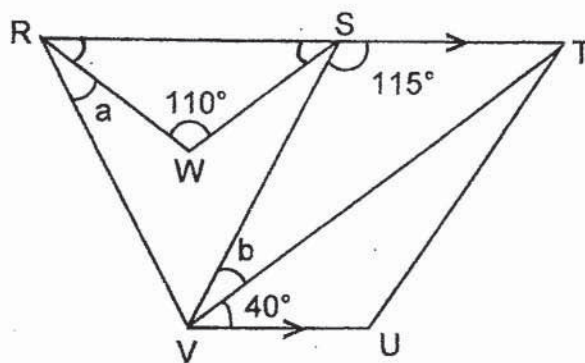
Ans (a) _____ [2]

(b) _____ [2]

12. In the figure below, not drawn to scale, RST is a straight line.
 $RW = SW$ and $RV = SV$.

a) Find $\angle a$.

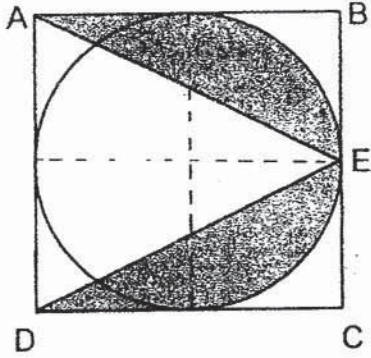
b) Find $\angle b$.



Ans: (a) _____ [2]

(b) _____ [2]

13. The figure below shows a circle in a square ABCD of side 26 cm. E is the midpoint of line BC. Find the area of the shaded region. (Take $\pi = 3.14$)



Ans: _____ [4]

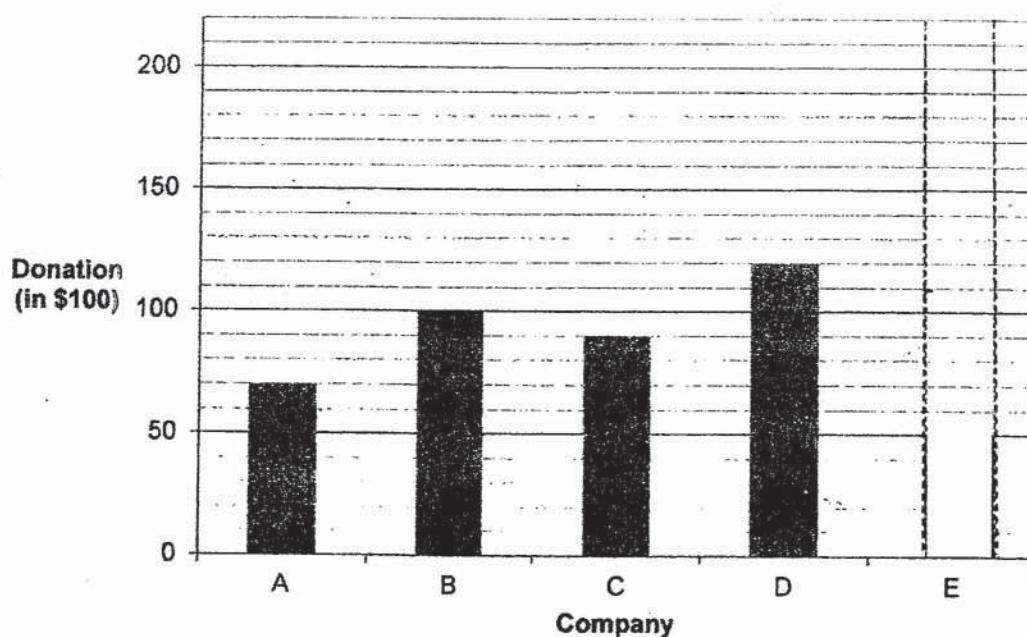
14. Amy, Beth and Cally had a total weight of 115 kg. One year later, Amy's weight doubled. Beth's weight increased by 15 kg and Cally's weight reduced by 5 kg. As a result, Amy became twice as heavy as Beth and Beth became twice as heavy as Cally.

- a) Find Beth's weight at first.
- b) Find their average weight in the end. Round your answer to the nearest whole number.

Ans (a) _____ [2]

(b) _____ [2]

15. The bar graph shows the donation collected by 5 companies.



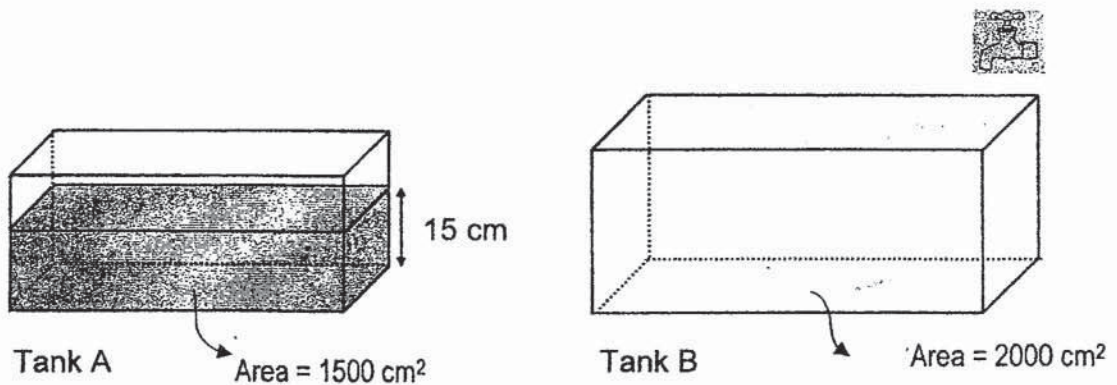
- a) The donation of Company B is twice that of Company E.
Complete the bar graph. [1]
- b) Which Company collected the most amount of money?
- c) What is the average donation collected by Company A, B, C and D?

Ans: (b) _____ [1]

(c) _____ [2]

16. Tank A and Tank B are rectangular tanks.
The base area of Tank A is 1500 cm^2 and the base area of Tank B is 2000 cm^2 .
At first, Tank A has water up to a height of 15 cm and Tank B is empty.

- a) When the tap is turned on for 11 minutes, water flows into Tank B at a rate of 4ℓ per minute.
- How much water is there in Tank B ?
 - What is the height of the water level in Tank B?
- b) Then, some water in Tank B is transferred into Tank A so that the height of the water level in both tanks are the same. What is the increase in the height of the water level for Tank A?



Ans: (a) (i) _____ [1]

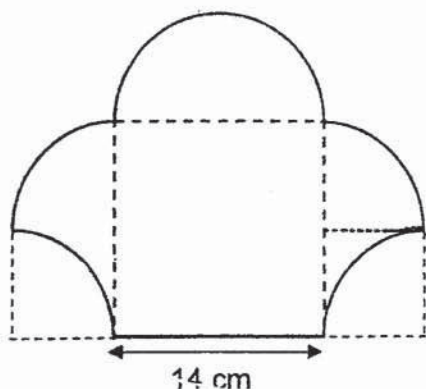
(ii) _____ [1]

(b) _____ [3]

17. Mary designed the following figure with quadrants and semicircles. She wants to bend wire to make the figure. A figure can only be formed using a single piece of wire.

(a) How many centimetres of wire is needed to make 1 such figure ? (Take $\pi = \frac{22}{7}$)

(b) The wires are sold in rolls of 2 m long. How many such rolls of wire would Mary need to buy to make 10 figures ?



Ans: a) _____ [2]

b) _____ [3]

End of Paper 2

Answer Key & Worked Solutions

Tao Nan Paper

P6 Mathematics SA1 2018

Paper 1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	1	1	4	2	3	3	2	3
Q11	Q12	Q13	Q14	Q15					
2	2	4	1	4					

Q16) 58

Q17) 1.017 kg

Q18) $3\frac{5}{12}$ Q19) $3a + 2$ Q20) 270°

Q21) \$5.00

Q22) $\frac{1}{14}$

Q23) \$300

Q24) 31.4 cm

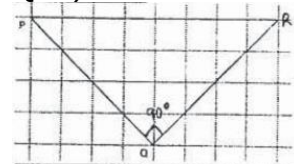
Q25) 5 cm^2

Q26) 1 h 30 min

Q27) $\frac{8}{33}$

Q28) 0.5 kg

Q29) 96 min

Q30) $PR = 8\text{ cm}$ Paper 2

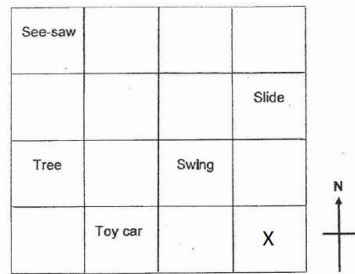
Q1. $120 \div 3 = 40$
 $120 \div 4 = 30$
 $30 + 40 = 70$
 $120 - 70 = 50$ pears

Q2. $60 - 36 = 24$
 $24 : 36$
 $2 : 3$

Q3. (a) 19 kg 400 g
 (b) $\frac{13}{16}$

Q4. $4p - p - 1 = 3p - 1$
 $\rightarrow \frac{3p-1}{2}$

Q5. (a) West
(b)



Worked Solutions

Show your working clearly in the space provided for each question and write your answers in the spaces provided.

6. a)

$$\angle AOC = 132 - 90 = 42^\circ$$

$$\angle y = 180 - 42 = 138^\circ$$

b)

$$\angle z = 180 - 138 = 42^\circ$$

Ans: (a) 138°
(b) 42°

7. Let radius = r

$$\text{Base} = \text{height} = 2r$$

$$r + 2r = 60$$

$$3r = 60$$

$$r = 60 \div 3 = 20 \text{ cm}$$

$$\text{Area of triangle} = \frac{1}{2} \times 2 \times 20 \times 2 \times 20 = 800 \text{ cm}^2$$

Ans: 800 cm^2

8. Let $2u$ = cost per kg of peaches
Cost per kg of cherries = $3u$
Total cost = $2.5 \times 3u + 3 \times 2u = 54$
 $13.5u = 54$
 $u = 54 \div 13.5 = 4$
Cost of 1 kg of peaches = $2u = 2 \times 8 = \$8$

Ans: \$8

-
9. $17\% \rightarrow 34$
 $1\% \rightarrow 2$
Number of girls $\rightarrow 100\%$
Number of boys $\rightarrow 83\%$
Total $\rightarrow 183\%$
 $183\% \rightarrow 2 \times 183 = 366$
Total number of children = 366

Ans: 366

10. Length = breadth = height of cube = 6 cm
Volume of blue cube = $6 \times 6 \times 6 = 216 \text{ cm}^3$

Ans: 216 cm^3

11. a)
Price difference = $2.50 + 2 = \$4.50$
Price difference in percent = $20 - 15 = 5\%$
 $5\% \rightarrow 4.50$
 $1\% \rightarrow 0.90$
 $100\% \rightarrow \$90$
b)
Price of 20% discounted black shoes = $90 \times 0.8 = \$72$
Amount Jerry had at first = $72 + 2 = \$74$

Ans: (a) \$90
(b) \$74

12. a)

$$\angle SRV = RSV = 180 - 115 = 65^\circ$$

$$\angle WRS = (180 - 110) \div 2 = 35^\circ$$

$$\angle a = 65 - 35 = 30^\circ$$

b)

$$\angle STV = 40^\circ$$

$$\angle b = 180 - 115 - 40 = 25^\circ$$

Ans: (a) 30°
(b) 25°

13. Radius = 13 cm

$$\text{Area of quad circle} = \frac{1}{4} \times 3.14 \times 13 \times 13 = 132.66 \text{ cm}^2$$

$$\begin{aligned} \text{Area of Quad crescent} &= \text{small square} - \text{quad circle} \\ &= 13 \times 13 - 132.66 = 36.33 \text{ cm}^2 \end{aligned}$$

$$\text{Area of triangle} = \frac{1}{2} \times 26 \times 26 = 338 \text{ cm}^2$$

$$\text{Shaded area} = 26 \times 26 - 338 - 36.33 - 36.33 = 265.33 \text{ cm}^2$$

Ans: 265.33 cm^2

14. a)

1 year later

Weight of Beth & Cally & original Amy's weight = $115 + 15 - 5 = 125$ kgLet Cally's weight = c Beth's weight = $2c$ Original Amy's weight = $2c$

$$5c = 125$$

 $c = \text{Cally's weight} = 25$ kgBeth's weight = $2c = 25 \times 2 = 50$ kgBeth's original weight = $50 - 15 = 35$ kg

b)

1 year later

Amy's weight = $50 \times 2 = 100$ Total weight = $25 + 50 + 100 = 175$ kgAverage weight = $175 \div 3 = 58.33$ kg ≈ 58 kg

Ans: (a) 35kg

(b) 58 kg

15. a)

Donation of Company E = $100 \times 100 \div 2 = \5000

b)

Company D

c)

Total of company A,B, C and D = $(70 + 100 + 90 + 120) \times 100 = \$38\,000$ Average = $38\,000 \div 4 = \$9\,500$

Ans: (a) \$5000

(b) Company D

(c) \$9 500

16. a)
i) Water in Tank B = $11 \times 4 = 44 \text{ l}$
ii) height of Tank B = $44\,000 \div 2000 = 22 \text{ cm}$
Volume of water in Tank B = $44\,000 \text{ cm}^3$

b)
Original volume of Tank A = $1500 \times 15 = 22\,500 \text{ cm}^3$

Total volume = $44\,000 + 22\,500 = 66\,500 \text{ cm}^3$

Total area = $1500 + 2000 = 3500$

Height at end = $66\,500 \div 3500$
= 19 cm

Increase in height = $19 - 15 \text{ cm} = 4 \text{ cm}$

Ans: (a) i) 44 l
ii) 22 cm

(b) 4 cm

17. a)

diameter = 14 cm

Number of quadrants = 6

Perimeter of 6 quadrants = $\frac{22}{7} \times 14 \times 6 \div 4 = 66$ cmPerimeter of figure = $66 + 14 = 80$ cm

b)

Length of 10 figures = $80 \times 10 = 800$ cm = 8 mNumber of rolls = $8 \div 2 = 4$ rolls

Ans: (a) 80 cm

(b) 4 rolls
