# CATHOLIC HIGH SCHOOL

## PRELIMINARY EXAMINATION (2020)

## PRIMARY SIX

## MATHEMATICS

## PAPER 1

## (BOOKLET A)

Name : _____( )

Class : Primary 6_____

Date : 25 August 2020

Total time for Booklet A and B : 1 hour

15 questions

20 marks

Parent's signature : _____

**INSTRUCTIONS TO CANDIDATES**

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

The use of calculators is **NOT** allowed.

This booklet consists of 14 printed pages excluding the cover page.

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. All diagrams are not drawn to scale. (20 marks)

---

1. In 54.32, what does the digit 3 stand for?

(1) 3 ones

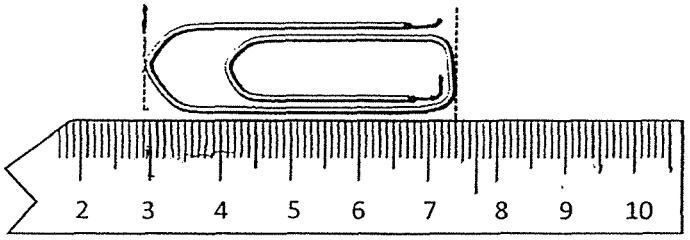
(2) 3 tens

(3) 3 tenths

(4) 3 hundredths

---

2. What is the length of the paper clip?




(1) 4.4 cm

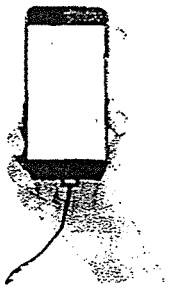
(2) 4.5 cm

(3) 5.5 cm

(4) 7.4 cm

---

3. Which of the following is the likely mass of a handheld mobile phone?



(1) 20 g

(2) 2 g

(3) 200 g

(4) 2000 g

---

4. Suresh paid $15 for 30 cookies. How much did each cookie cost?

(1) 5 ¢

(2) 2 ¢

(3) 20 ¢

(4) 50 ¢

---

5. Mr Ong arranges 18 blue chairs and 24 green chairs in rows. Each row has an equal number of chairs of the same colour. What is the greatest number of chairs that Mr Ong can arrange in each row?

(1) 6

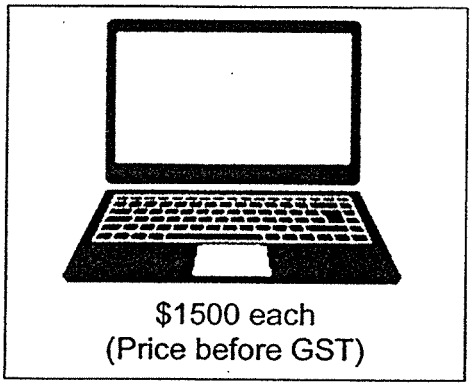
(2) 7

(3) 3

(4) 14

---

6. What is the price of a laptop after adding 7% GST?




(1) $1395

(2) $1493

(3) $1507

(4) $1605

---

7. A group of pupils ran in a race. The table shows the number of pupils with the following times clocked in the race.

| Time clocked (s) | 150 | 151 | 153 | 155 | 157 | 158 | 160 |
|---|---|---|---|---|---|---|---|
| Number of pupils | 2 | 3 | 2 | 7 | 3 | 2 | 2 |

Prizes were given to the top 7 pupils. Bryan won a prize. What was the slowest time he could have clocked?

(1) 150 s

(2) 153 s

(3) 155 s

(4) 157 s

---

8. $\frac{3}{10}$ of the seats in an aeroplane are business class seats while the rest are economy class seats. $\frac{3}{5}$ of the economy class seats are occupied.
What fraction of all the seats in the aeroplane are unoccupied economy class seats?

(1) $\frac{2}{5} \times \frac{7}{10}$

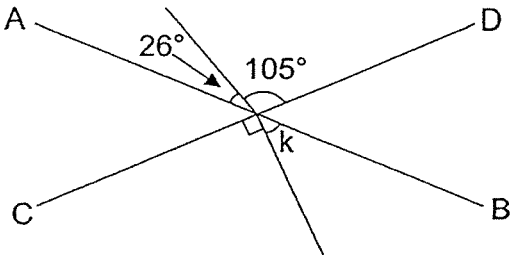
(2) $\frac{2}{5} \times \frac{3}{10}$

(3) $\frac{3}{5} \times \frac{3}{10}$

(4) $\frac{3}{5} \times \frac{7}{10}$

---

9. In the figure, AB and CD are straight lines. Find $\angle k$.




(1) 15°

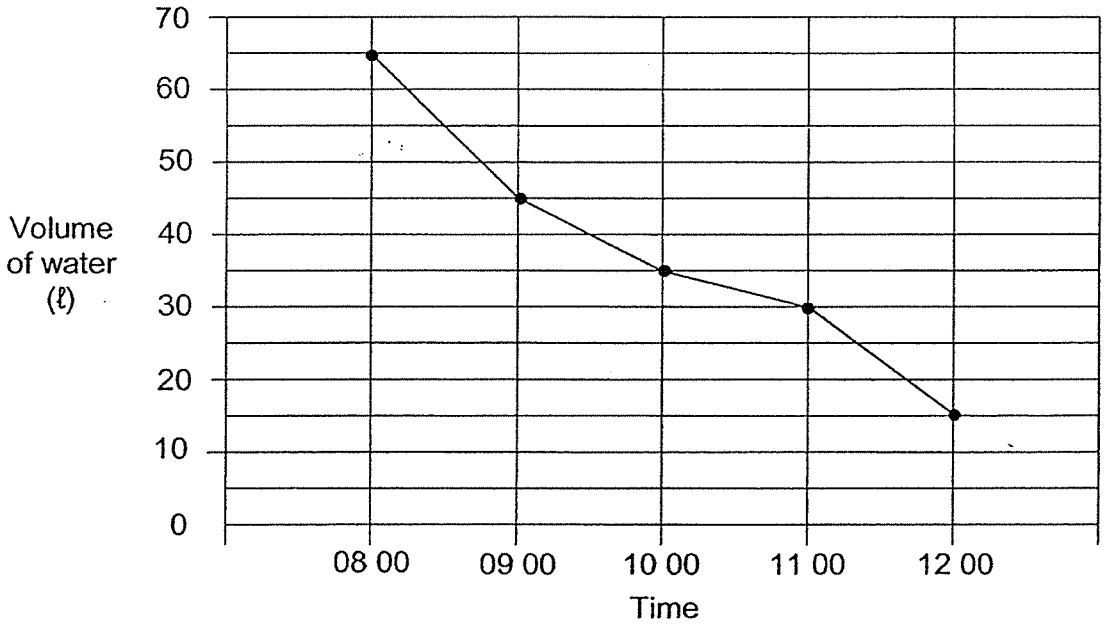
(2) 26°

(3) 41°

(4) 49°

---

10. A tank was filled with 65 ℓ of water at 08 00. Water flowed out of the tank from 08 00 to 12 00. The line graph shows the volume of water in the tank from 08 00 to 12 00.




During which one-hour period was the decrease in volume of water the greatest?

(1) Between 08 00 and 09 00

(2) Between 09 00 and 10 00

(3) Between 10 00 and 11 00

(4) Between 11 00 and 12 00

---

11. Arrange these distances from the shortest to the longest.

| | | |
|---|---|---|
| 4.23 km | $4\frac{1}{5}$ km | 4 km 25 m |

| | Shortest | | | | Longest |
|---|---|---|---|---|---|
| (1) | 4.23 km | , | $4\frac{1}{5}$ km | , | 4 km 25 m |
| (2) | 4 km 25 m | , | $4\frac{1}{5}$ km | , | 4.23 km |
| (3) | $4\frac{1}{5}$ km | , | 4 km 25 m | , | 4.23 km |
| (4) | $4\frac{1}{5}$ km | , | 4.23 km | , | 4 km 25 m |

---

12. Lin, Mat and Ned went for a run of different distances L, M and N respectively. During the run, they covered an equal distance before they stopped for a water break. At that time, Lin had completed $\frac{1}{2}$ of distance L, Mat had completed $\frac{2}{3}$ of distance M and Ned had completed $\frac{3}{5}$ of distance N.
What is the ratio of the distance L to distance M to distance N?

(1) 1 : 2 : 3

(2) 2 : 3 : 5

(3) 12 : 9 : 10

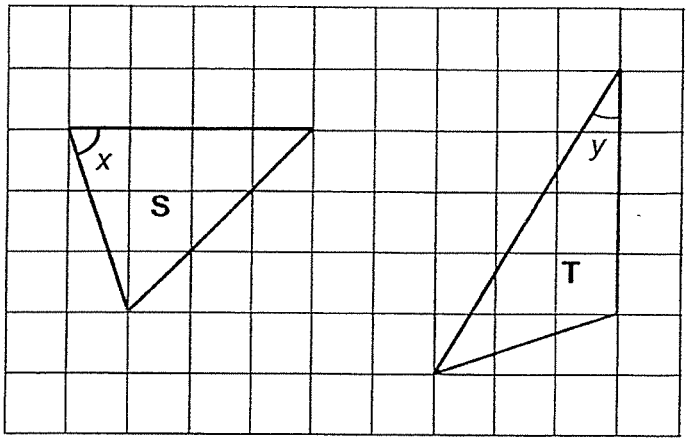
(4) 15 : 20 : 18

---



(Go on to the next page)

13. Two figures S and T are shown in the square grid below.




Which of the following statement(s) is/are **true**?

A. $\angle x + \angle y = 90^\circ$

B. Figure S has the same area as Figure T.

C. Figure S has the same perimeter as Figure T.

(1) B only

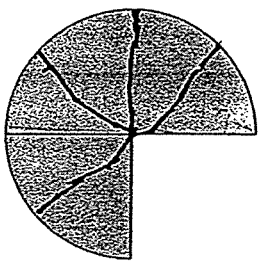
(2) C only

(3) A and B only

(4) A and C only

---

14. The figure is made up of a semicircle and a quarter circle of the same radius 4 cm. What is the perimeter of the shaded figure?
Give your answer in terms of $\pi$.



(1) $6\pi$ cm

(2) $12\pi$ cm

(3) $(6\pi + 8)$ cm

(4) $(6\pi + 12)$ cm

---

15. Mdm Loke made $\frac{5}{6}$ ℓ of drink. She poured the drink into as many cups of $\frac{1}{3}$ ℓ as possible and had some drink left. What was the volume of the drink left?

(1) $\frac{5}{12}$ ℓ

(2) $\frac{1}{2}$ ℓ

(3) $\frac{1}{3}$ ℓ

(4) $\frac{1}{6}$ ℓ

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**END OF BOOKLET A**

# CATHOLIC HIGH SCHOOL

## PRELIMINARY EXAMINATION (2020)

## PRIMARY SIX

## MATHEMATICS

## PAPER 1

## (BOOKLET B)

Name : _____( )

Class : Primary 6_____

Date : 25 August 2020

Total time for Booklet A and B : 1 hour

15 questions

25 marks

Parent's signature : _____

| | |
|---|---|
| BOOKLET A | 20 |
| BOOKLET B | 25 |
| Total Marks | 45 |

**INSTRUCTIONS TO CANDIDATES**

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

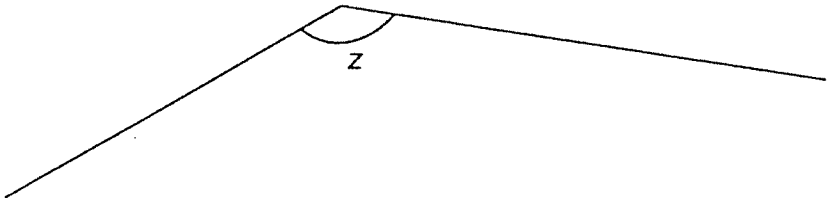
The use of calculators is **NOT** allowed.

This booklet consists of 14 printed pages excluding the cover page.

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. All diagrams are not drawn to scale. (5 marks)

Do not write in this space

16. Measure and write down the size of $\angle z$ in the figure.




Ans: _____ °

17. Express 0.7% as a fraction.

Ans: _____

18. Find the value of $\frac{10k}{4} - 2k + 3$ when $k = 10$.

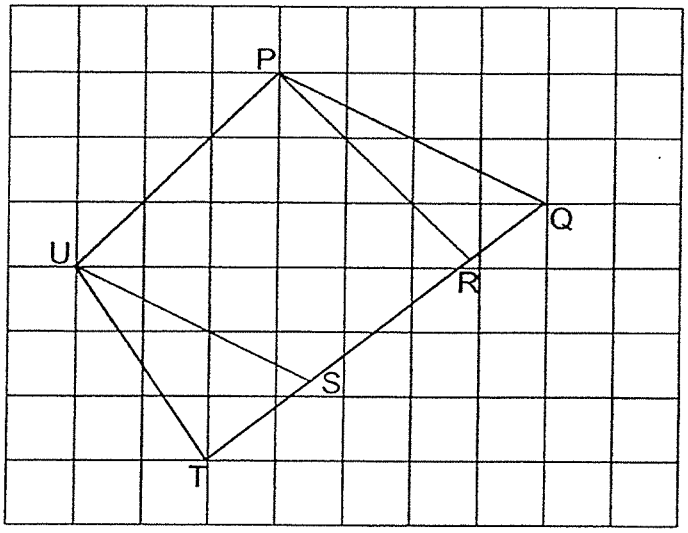
Ans: _____



(Go on to the next page)

*Refer to the figure below to answer questions 19 and 20.*

Do not write in this space




19. Name the two lines that are parallel to each other.

Ans: _____ and _____

20. Name the two lines that are perpendicular to each other.

Ans: _____ and _____

**Total marks for questions 16 to 20**

5

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. All diagrams are not drawn to scale.

(20 marks)

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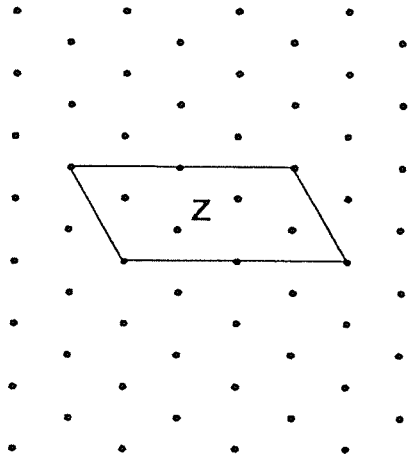
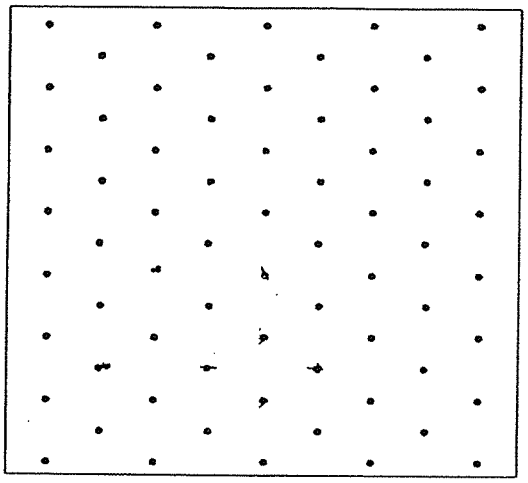
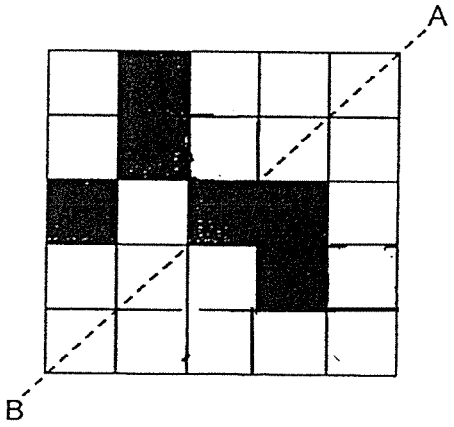
21. Draw an equilateral triangle with the same area and perimeter as Figure Z in the box provided.



22. There are 6 shaded squares in the figure. Shade 3 more squares to form a symmetric figure with AB as the line of symmetry.



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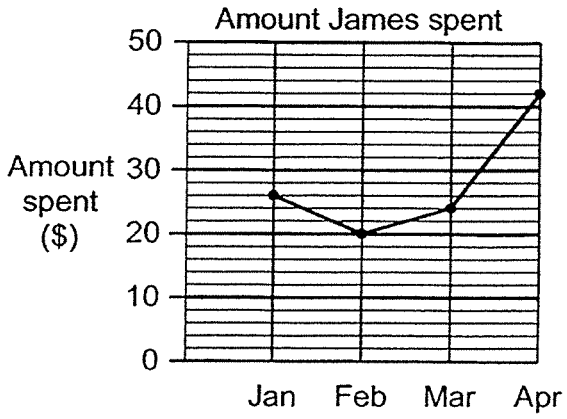
23. James received a fixed amount of allowance from his parents each month. Every month, James spent some of his allowance and saved the rest of the allowance in his savings box.
The graph shows the amount of money he spent each month.

Do not write in this space




a) In which month did he save the most of his allowance in his savings box?

b) In April, $\frac{3}{4}$ of the amount James spent was on food. How much did he spend on food?

Ans: a) _____

b) $_____

24. In 1 minute, Machine A can pack 3 boxes of biscuits while Machine B can pack 4 boxes of biscuits. Both machines started packing at 12.50 p.m. At what time will both machines pack 105 boxes of biscuits in total? Leave your answer in 24-hour clock.

Ans: _____



(Go on to the next page)

25. Samantha wanted to fill 24 similar bottles completely with the drink she made but found that she needed an additional 3.1 ℓ of the drink. Instead, she filled 18 similar bottles and had 5.3 ℓ of the drink left. What was the capacity of one such bottle?

Do not write in this space

Ans: _____ ℓ

26. The table shows the charges for fishing rod rental at a fishing pond.

| FISHING ROD RENTAL | |
|---|---|
| For the first hour | $8 |
| For every additional $\frac{1}{2}$ hour | $3 |

Tim has $32 and wants to rent a fishing rod. What is the greatest number of hours Tim can rent the fishing rod for?

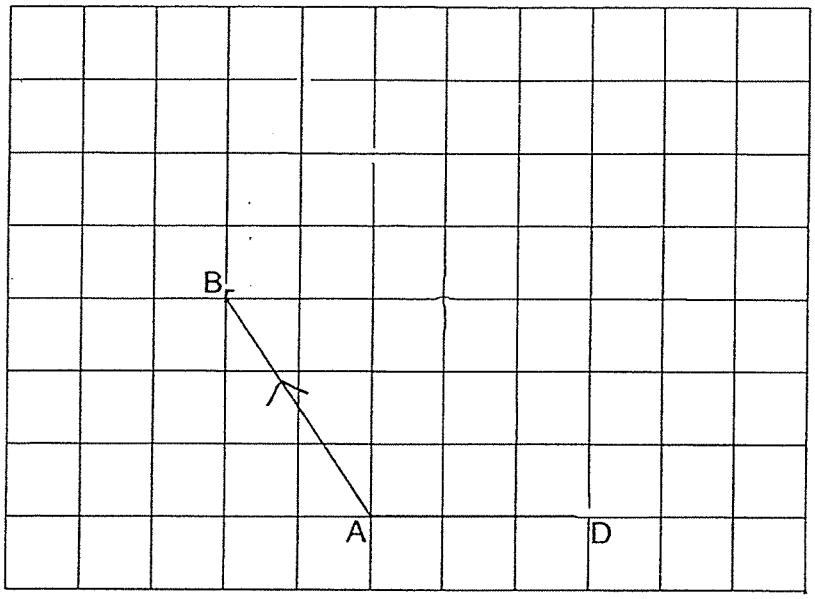
Ans: _____ h



(Go on to the next page)

27. In the square grid below, AB and AD are two sides of a trapezium ABCD. AB is parallel to CD and the length of CD is twice the length of AB. Complete the trapezium by drawing the other two sides.

Do not write in this space




28. Luke needed some pieces of tape, each of length 8 cm, to seal some boxes. He bought 3 rolls of tape measuring 100 cm each. What was the greatest number of 8-cm tapes that Luke could cut from the 3 rolls of tape?

Ans: _____



(Go on to the next page)

29. John had $60 more than Kurt at first. Kurt gave $12 to John. John then had 3 times as much money as Kurt. How much money did Kurt have in the end?

Do not write in this space

Ans: $_____

30. Kevin cuts a square paper along the dotted lines as shown in Figure 1 to get 3 identical rectangular pieces of paper. Rectangle ABCD in Figure 2 is one such rectangular paper with a perimeter of 56 cm.
What is the length of one side of the square paper in Figure 1?

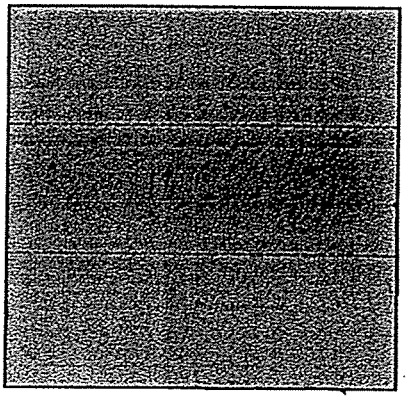


Figure 1

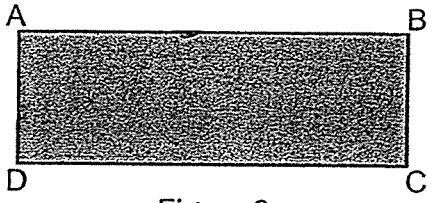



Figure 2

Ans: _____ cm

**Total marks for questions 21 to 30**

**END OF BOOKLET B**
**END OF PAPER 1**

20

# CATHOLIC HIGH SCHOOL

## PRELIMINARY EXAMINATION (2020)

## PRIMARY SIX

## MATHEMATICS

## PAPER 2

Name : _____( )

Class : Primary 6_____

Date : 25 August 2020

Total time : 1 h 30 min

17 questions

55 marks

Parent's signature : _____

| | |
|---|---|
| PAPER 1 BOOKLET A | 20 |
| PAPER 1 BOOKLET B | 25 |
| PAPER 2 | 55 |
| Total Marks | 100 |

**INSTRUCTIONS TO CANDIDATES**

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of an approved calculator is expected, where appropriate.

This booklet consists of 15 printed pages excluding the cover page.

Questions **1** to **5** carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (10 marks)

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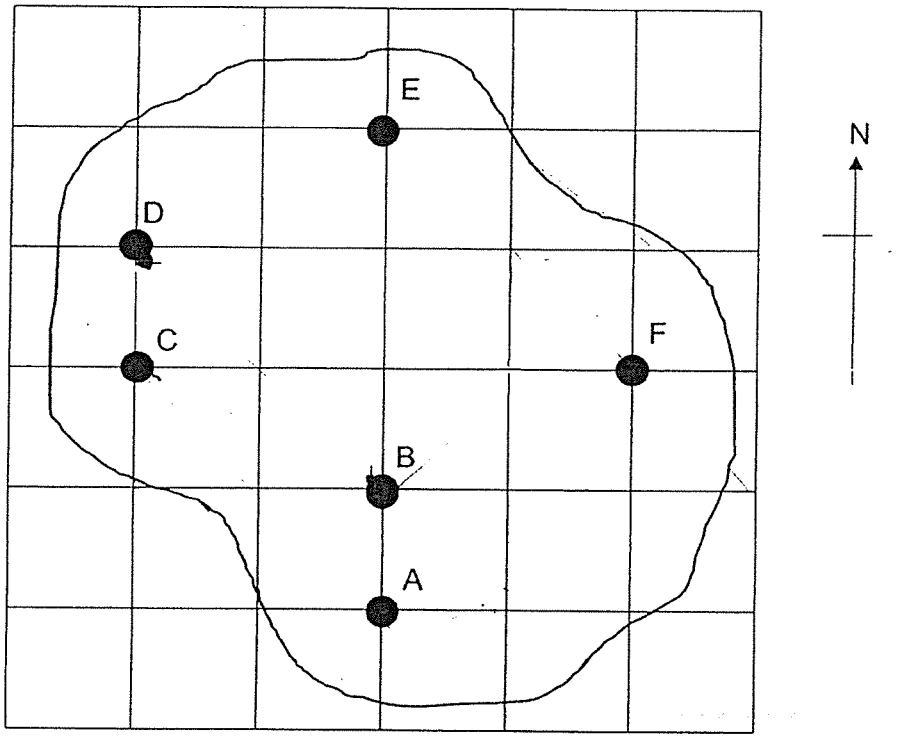
1. The square grid shows the position of points A, B, C, D, E and F.




a) In which direction is point A from point C?

b) Jamie stood at one of the points facing point B. After she turned 45° anti-clockwise, she faced point F. Which point was Jamie at before she turned?

Ans: a) _____

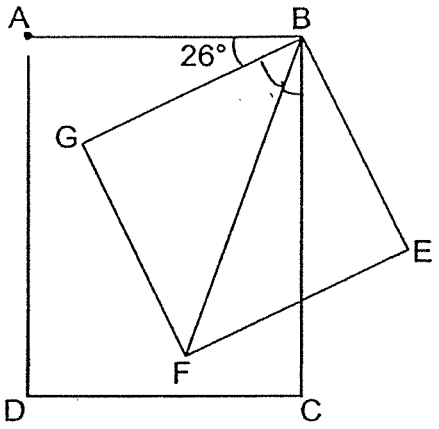
b) Point _____

2. Penny had 16 twenty-cent coins and 20 fifty-cent coins. Richard had as many coins as Penny but had $2.10 less. How many twenty-cent coins did Richard have?

Do not write in this space

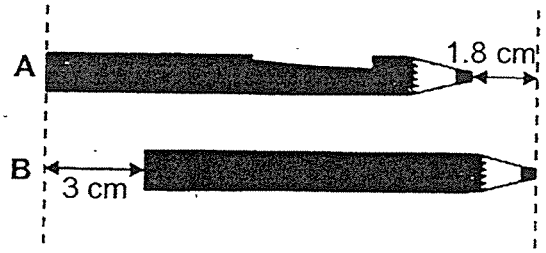
Ans: _____

3. In the figure, ABCD is a rectangle. BEFG is a square and ∠ABG = 26°. Find ∠FBC.




Ans: _____ °

4. The length of pencil B is $\frac{9}{10}$ the length of pencil A.
Find the length of pencil A.




Do not write in this space

Ans: _____ cm

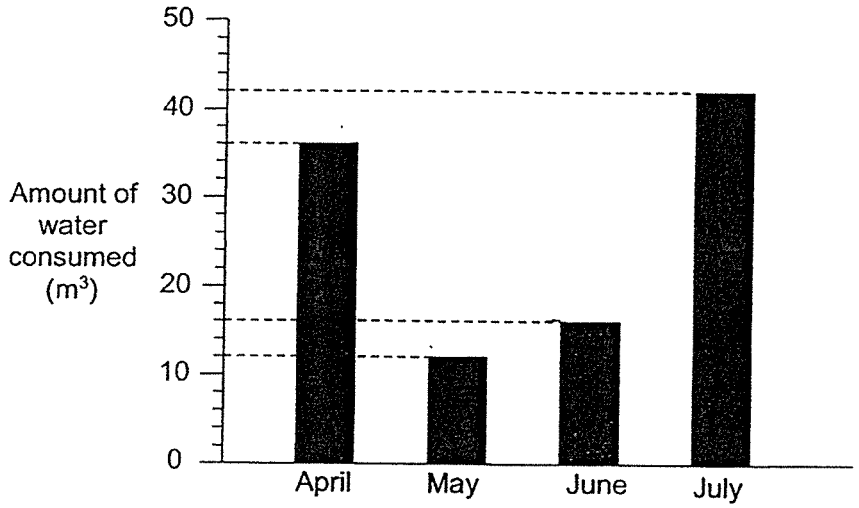
5. For a recycling project, Edmund collected 20 bottles and Fred collected $7k + 8$ bottles. They collected 154 bottles altogether.
What is the value of $k$?

Ans: _____

For questions **6** to **17**, show your working clearly in the space provided for each question 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)

Do not write in this space

6. The bar graph shows the amount of water consumed by a family from April to July.




a) How many times was the amount of water consumed in April as compared to May?

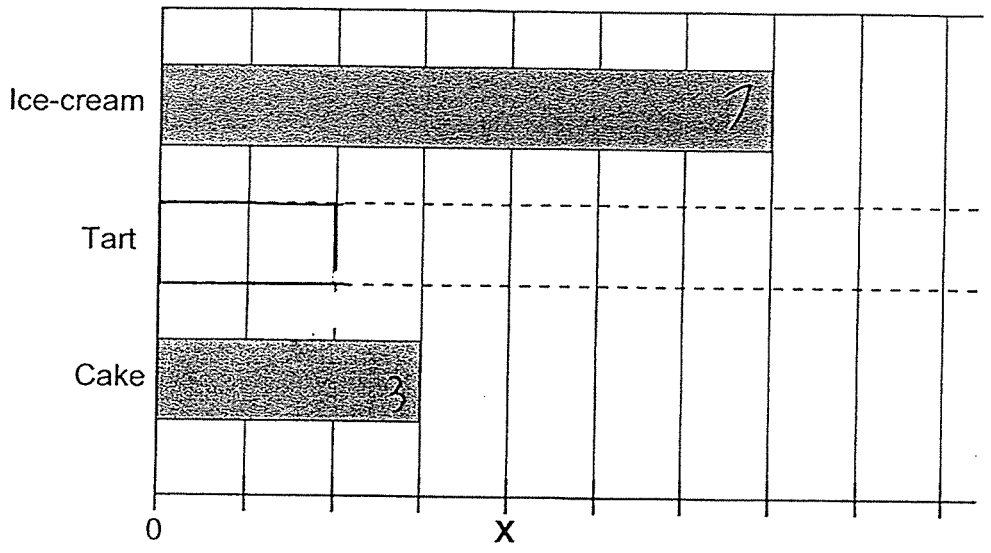
b) What was the percentage increase in the amount of water consumed by the family in July compared to June?

Ans: a) _____ [1]

b) _____ [2]

7. Ice-cream, tart and cake were available as dessert at a dinner. Each diner was asked to choose one dessert. The bar graph represents the diners' choices. The number of diners is not shown on the scale and the bar that shows the number of diners who chose tart has not been drawn.

Do not write in this space




[2]

a) What was the ratio of the number of diners who chose cake to the number of diners who chose ice-cream?

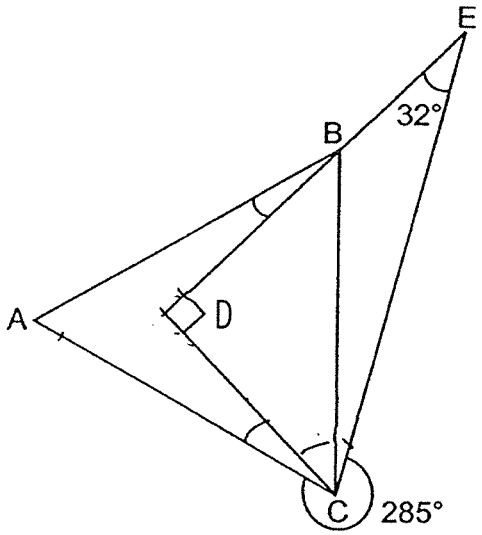
b) 'X' was the average number of diners who chose a dessert at the dinner. Draw the bar to represent the number of diners who chose tart in the graph.

Ans: a) _____ [1]

8. In the figure below, ABC is an equilateral triangle and CDE is a right-angled triangle. Point B of the equilateral triangle lies on the side DE of the right-angled triangle. $\angle DEC = 32°$ and $\angle ECA = 285°$.

Do not write in this space

Find $\angle ABD$.




Ans: _____ [3]

9. A rectangle is made up of four triangles A, B, C and D. The area of A to the area of the rectangle is 1 : 5 while the area of D to the area of the rectangle is 1 : 7.

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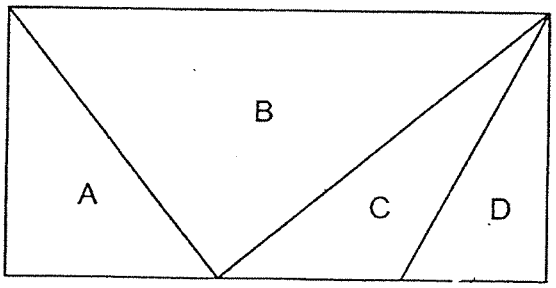


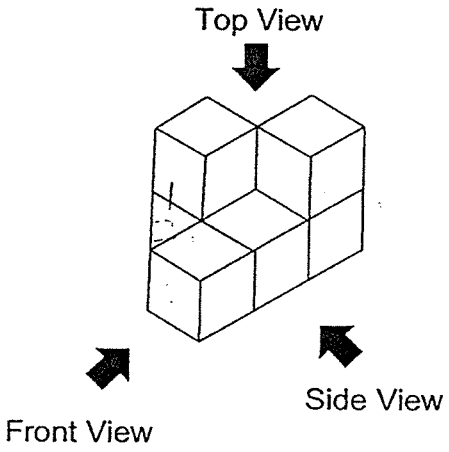

The area of B is 140 $cm^2$. What is the area of C?

Ans: _____ [3]

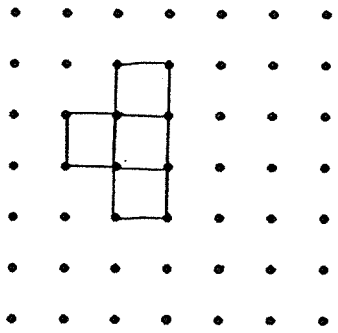
10. The solid below is made up of 6 identical cubes.

Do not write in this space

a) Draw the top view of the solid on the grid below.




Top View



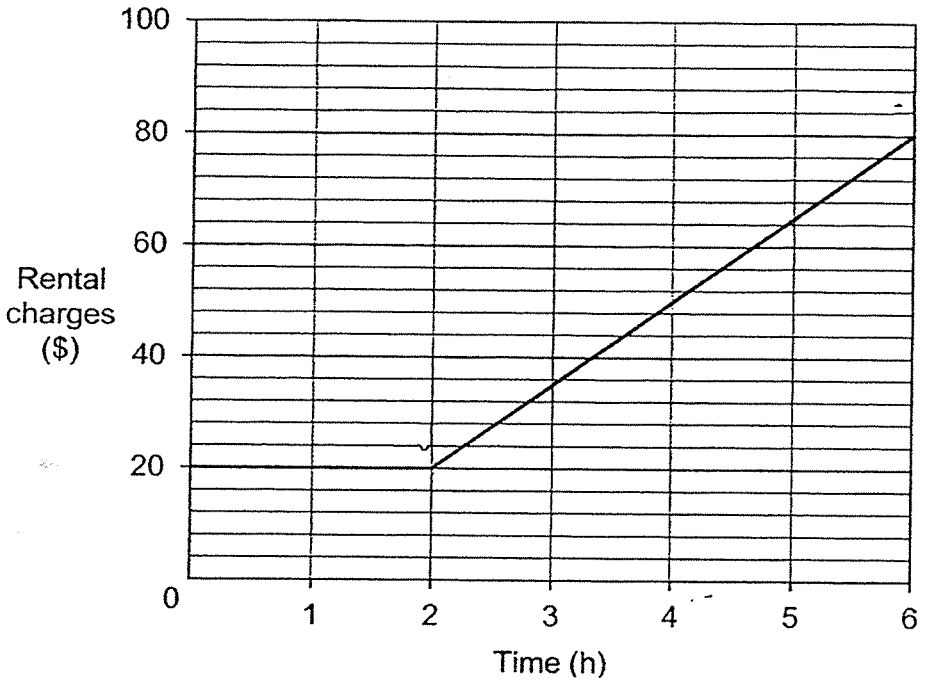
[1]

b) Linus painted the whole solid including the base. The total area painted is 416 $cm^2$. What is the length of one edge of each cube?

Ans: b) _____ [2]

11. The graph shows the rental charges for a recreation room for the first 6 hours.

Do not write in this space




a) How much is the rental charge for the recreation room for the first hour?

b) How much is the rental charge for every hour after the first 2 hours of use?

c) The rate for rental charge remains the same after the 6th hour. How much is the rental charge for 7 hours?

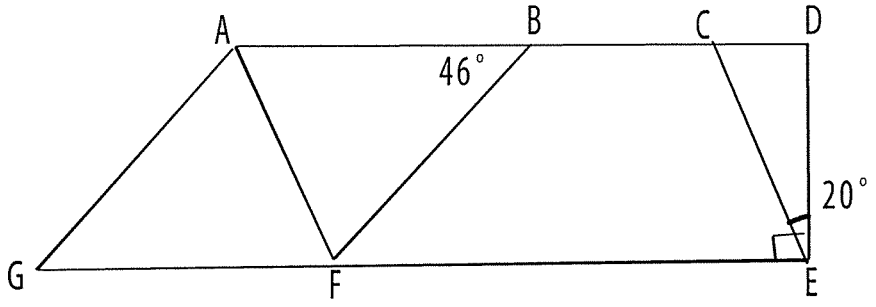
Ans: a) _____ [1]

b) _____ [2]

c) _____ [1]

12. In the figure below, ABF and AFG are isosceles triangles with BA = BF and GA = GF respectively. AF is parallel to CE. ∠DEF is a right angle. ABC is a straight line.

Do not write in this space




a) Find ∠BCE.

Ans: a) _____ [2]

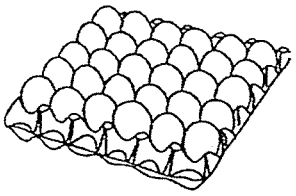
b) The figure above is not drawn to scale. Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

| Statement | True | False | Not possible to tell |
|---|---|---|---|
| ABFG is a rhombus | | | |
| ACEF is a parallelogram | | | |

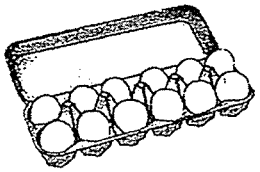
[2]

13. Eggs were only sold in trays of 30 eggs at a shop.

Do not write in this space



Mr Lee bought some such trays of eggs and re-packed them into carton boxes of 12 eggs as shown below. He needed 6 more eggs to have exact carton boxes of 12 eggs and 26 more carton boxes than trays.



How many eggs did Mr Lee buy from the shop?

Ans: _____ [4]

14. Mr Ang paid $315 for 21 chairs. Mr Bay paid the same amount but got 4 more chairs than Mr Ang because he used a membership coupon that gave him a discount for every 4 chairs purchased.

Do not write in this space

a) How much would Mr Bay had paid for the chairs without the use of the membership coupon?

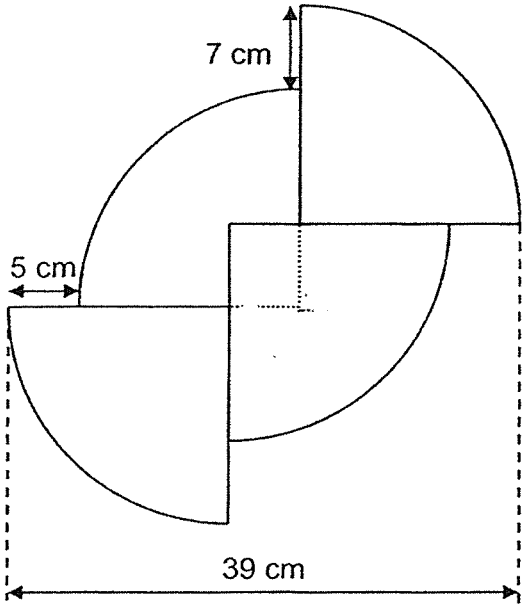
b) With the use of the membership coupon, how much was the discount for every 4 chairs purchased?

Ans: a) _____ [2]

b) _____ [2]

15. The figure is made of 4 identical quarter circles with 2 quarter circles overlapping to form a rectangle.

Do not write in this space




a) What is the radius of each quarter circle?

b) Find the area of the figure.
Take $\pi = 3.14$

Ans: a) _____ [1]

b) _____ [3]

16. Mabel used white dots, grey dots and sticks to form figures that follow a pattern. The first four figures of the pattern are shown below.

Do not write in this space

Figure 1

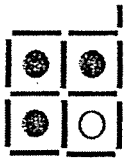


Figure 2

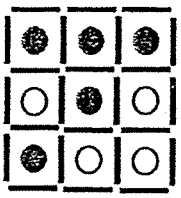


Figure 3

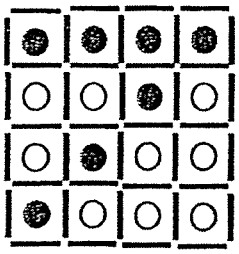


Figure 4

The table below shows the number of white dots, black dots and sticks used for each figure.

| Figure Number | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Number of white dots | 0 | 1 | 4 | 9 | |
| Number of grey dots | 1 | 3 | 5 | 7 | |
| Number of sticks | 4 | 12 | 24 | 40 | 60 |

[1]

a) Fill in the table for Figure 5.

b) How many white dots are there in Figure 50?

c) What is the total number of sticks in Figure 50?

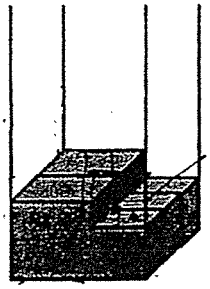
b) _____ [2]

c) _____ [2]

17. Axel and Brady had some identical large cubes and some identical small cubes. Each of them had a rectangular box of the same base but different height. They packed their cubes into their own box with cubes of the same size stacked on top of each other.

Do not write in this space

The figure below shows the first layer of cubes packed in each box.



a) Axel's box was packed tightly to the brim without any gaps. There were 50 more small cubes than large cubes. How many cubes were packed into the box altogether?

b) In Brady's box, the space occupied by all the large cubes and that of the small cubes was the same. What fraction of the cubes was the small cubes?

Ans: a) _____ [3]

b) _____ [2]

**END OF PAPER 2**

SCHOOL : CATHOLIC HIGH PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : MATH
TERM : 2020 PRELIM

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## PAPER 1 BOOKLET A

| Q 1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 2 | 3 | 4 | 1 | 4 | 2 | 1 | 3 | 1 |

| Q 11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|
| 2 | 3 | 1 | 3 | 4 |

## PAPER 1 BOOKLET B

Q16) 141°

Q17) $\frac{7}{1000}$

Q18) $\frac{10k}{4} - 2k + 3 = \frac{100}{4} - 20 + 3$

= 25-20+3

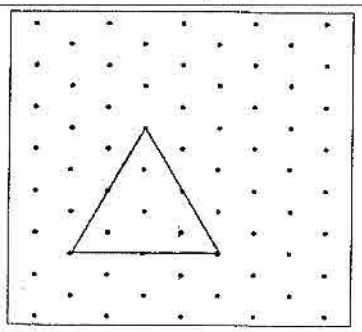
= 5+3

=8

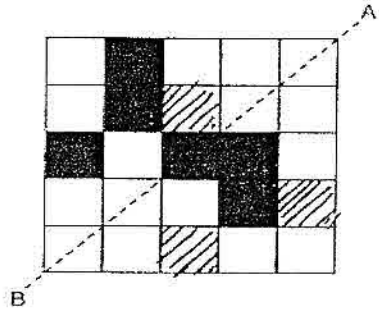
Q19) PQ and US

Q20) UP AND PR

Q21)



Q22)




Q23) a) February

b) $\frac{3}{2} x \frac{21}{1} = \frac{63}{2}$

=31.5

Q24) 3+4=7

105/7=15

1305

Q25) 5.3+3.1=8.4

24-16=6

8.4/6=1.4

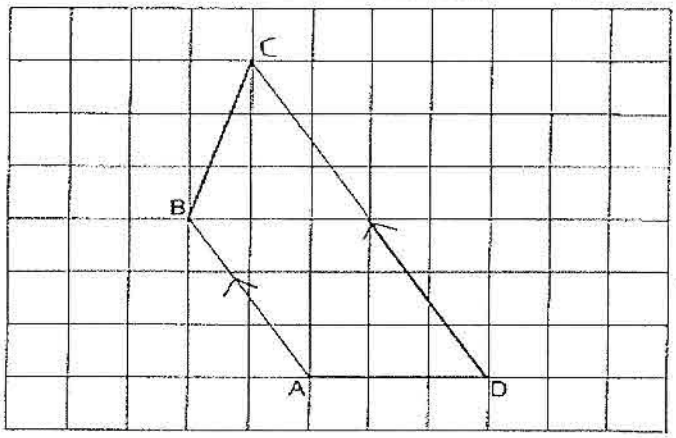
Q26) 32-8=24

24/3=8

8x0.5=4

4+1=5

Q27)




Q28) 100/8=12R4

12 x 3=36

Q29) **2u=12+60+12=84**

**1u=42**

Q30) 3u+1u+3u+1u=8u

8u=56

1u=7

3u=21

## PAPER 2

**Q1)**

a) Southeast
b) E

**Q2)**

50-20=30
210/30=7
16+7=23

**Q3)**

90-26-45=19

**Q4)**

9u+3=10u+1.8
1u=1.2
10u=12

**Q5)**

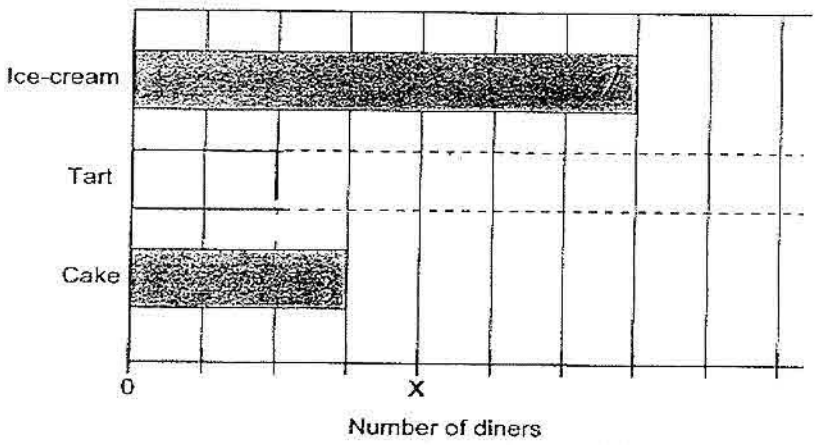
20+7k+8=7k+28
7k+28=154
7k=126
K18

**Q6)**

a)36/12=3
b)42-16=26

$$\frac{26}{16} \; x \; 100\% = 162.5\%$$

**Q7)**




a)
b) 4 x 3 =12
12-7-3=2
3:7

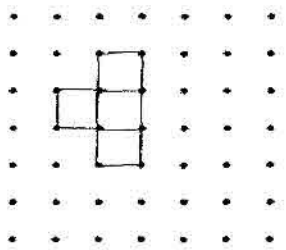
**Q8)**

180-32-90=58
360-90=270
360-58-285=17
360-60-270-17=13

**Q9)**

140 x 2 =280
5u-2.5u-1u-5/7u=11/14u
5u=280
1u=56
11/14u= 44

Q10)



a)

b)6x6=36

36-10=26

416/26=16

4x4=16

Q11) a)$20

b)$15

c)$95

Q12) a) 180-67=113

b) ABFG is a rhombus:not possible to tell

ACEF is a parallelogram: false

Q13) 30 x 5 =150

150+6=156

26 x 12=312

312-6=306

306/18=17

17 x 30=510

Q14) a) 21+4=25

315/12=15

15x25=375

b) 315-15=300

300/6=50

60-50=10

Q15) a) 39-5=34

34/2=17

b) 17x17x3.14=907.46

7x5=35

907.46-35=872.46

Q16) a) Number of white dots : 0 1 3 9 (16)

Number of grey dots : 1 3 5 7 (9)

b) 50-1=49

49x49=2401

c) 50+1=51

51x2=102

50x102=5100

Q17) a) 2 large = 3 small

1 set-> 4large +9 small cubes

50/5=10

4+9=13

10x13=130

b) Common height->6cm
6/3=2
6/2=3
3x3x3=27
Small=2x2x2=8
216/27=8
216/8=27
8+27=35
Ans: 27/35