

SAY

Name : _____

24 August 2005

Class : Pr. 6 ()

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CATHOLIC HIGH SCHOOL
PRELIMINARY EXAMINATION
PRIMARY SIX
MATHEMATICS
EM1/ EM2
BOOKLET A

15 questions

25 marks

Total Time For Booklets A and B : 2 h 15 min

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Questions 1 to 5 carry 1 mark each. Questions 6 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 correct oval on the Optical Answer Sheet. (25 marks)

1. The weight of your school bag is about _____.

- (1) 5 g
 - (2) 50 kg
 - (3) 500 kg
 - (4) 5000g
-

2. In a class of 40 pupils, there are 24 boys and the rest are girls. How many percent more boys than girls are there in the class?

- (1) $33\frac{1}{3}\%$
 - (2) 40%
 - ✓ (3) 50%
 - (4) 60%
-

3. Which of the following is the biggest ?

- (1) $\frac{4}{5}$ 2
 - (2) $\frac{5}{6}$
 - (3) 0.56
 - (4) 0.83
-

4. $\frac{4m}{5}$ is the same as _____.

- (1) $4m \times 5$
 - (2) $5m \times 4$
 - (3) $5m \div 4$
 - (4) $4m \times \frac{1}{5}$
-

5. Express $2\frac{2}{5}$ as a improper fraction.

(1) $\frac{9}{5}$

(2) $\frac{12}{5}$

(3) $\frac{22}{5}$

(4) $\frac{27}{5}$

6. Mary, Lucy and Carol shared \$375 in the ratio 7:3:5. How much money did Lucy receive?

(1) \$75

(2) \$125

(3) \$175

(4) \$200

7. Find the value of $\frac{7y}{4} - y + 1$ when $y = 8$.

(1) 5

(2) 6

(3) 7

(4) 9

8. How many sixths are there in $2\frac{1}{3}$?

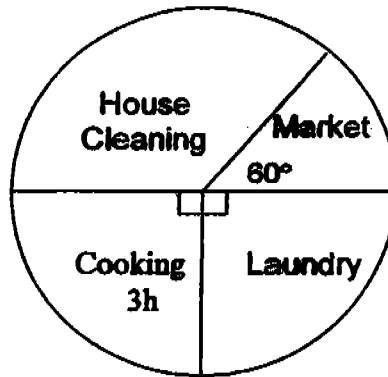
(1) 7

(2) 12

(3) 13

(4) 14

9. This pie chart shows how Mrs Lin distributes her time in doing the household chores daily.

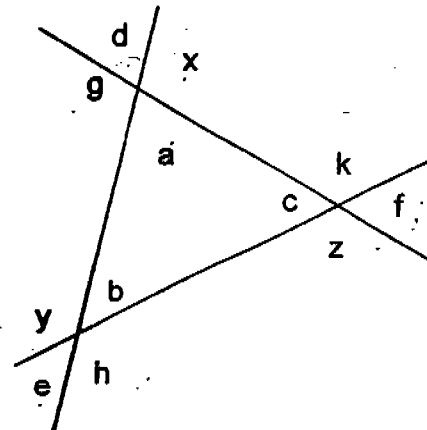


If Mrs Lin spends 3 hours cooking, how many hours is spent on house cleaning?

- (1) 6 h
- (2) 2 h
- (3) 3 h
- (4) 4 h

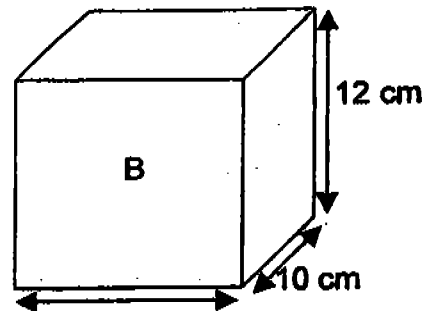
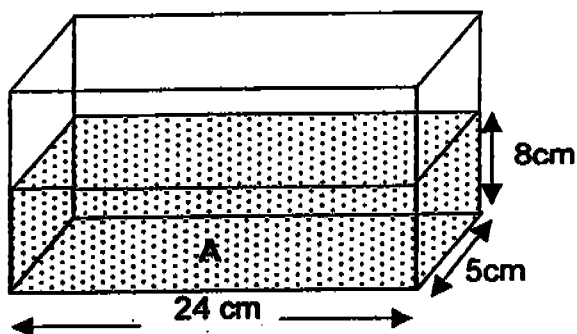
10. Study the figure carefully.

Which of the following is true?



- (1) $\angle a + \angle h + \angle z = 180^\circ$
- (2) $\angle a + \angle g + \angle x = 180^\circ$
- (3) $\angle d + \angle h + \angle f = 180^\circ$
- (4) $\angle d + \angle e + \angle f = 180^\circ$

11. Equal amount of water is poured into 2 empty tanks A and B shown below. If tank A is half-filled, what is the height of the water level in Tank B?



- (1) 3 cm
(2) 6 cm
(3) 9 cm
(4) 12 cm
-
12. A tree was 8 m tall. After 2 years, it grew to 10 m tall. Calculate the percentage increase in the height of the tree.
- (1) 10%
(2) 20%
(3) 25%
(4) 80%
-
13. During a camp, Albert slept 3 hours, Xavier slept 9 hours and Philip slept $4\frac{1}{2}$ hours. What is the ratio of the duration of Philip's sleep to Albert's to Xavier's sleep?
- (1) 2 : 6 : 3
(2) 3 : 2 : 6
(3) 3 : 9 : 4.5
(4) 6 : 18 : 9

14. A train, 135 m long and traveling at an average speed of 120 km/h, took 15 s to pass through a tunnel. Find the length of the tunnel.

- (1) 230 m
 - (2) 365 m
 - (3) 29 km 730 m
 - (4) 29 km 865 m
-

15. Alan and Raju ran round a track of 400 m at an average speed of 8 km/h and 10 km/h respectively. Given that they began the race together at the starting point and ran in a clockwise direction, how many rounds would Raju have run when he met Alan at the starting point again?

- (1) 1 round
 - (2) 5 rounds
 - (3) 9 rounds
 - (4) 4 rounds
-

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CATHOLIC HIGH SCHOOL
PRELIMINARY EXAMINATION
PRIMARY SIX
MATHEMATICS
EM1/ EM2
BOOKLET B

35 questions

75 marks

Total Time For Booklets A and B : 2 h 15 min

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Marks obtained for Booklet A	25
Marks obtained for Booklet B	75
Total Marks	100

Questions 16 to 35 carry 1 mark each. Write your answers in the space provided. Give your answers in the units stated.

Do not write in this space

(20 marks)

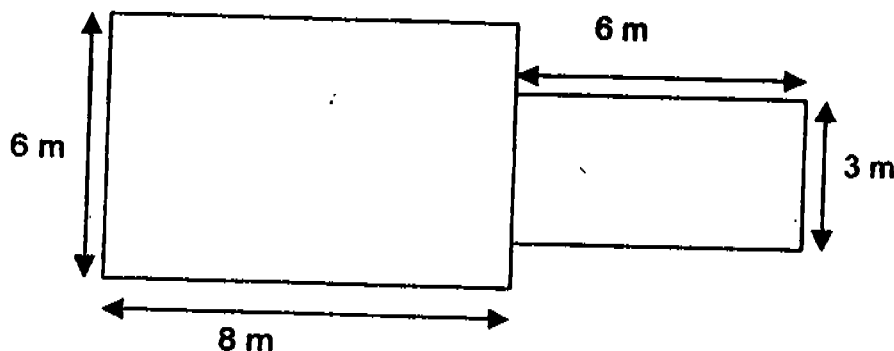
16. Sally is facing the east. If she turns 225° anticlockwise, which direction will she be facing?

Answer : _____

17. Damien started doing his homework at 10.45am and ended at 3.25pm. He took a 50-min lunch break at 12.40pm. How much time did he spend on his homework?

Answer : _____ h _____ min

18. A garden is made up of 2 rectangles as shown below. What is the perimeter of the garden?



Answer : _____ m

SCORE

3

19. The average height of 3 boys is 1 m 20 cm. When another boy joins the group, their average height becomes 1 m 10 cm. What is the height of the 4th boy?

Do not write
in this space

Answer : _____ cm

20. Find the remainder when 1836 is divided by 38.

Answer : _____

21. A train travels 3245 km per day. What distance would it have travelled in 73 days?

Answer : _____ km

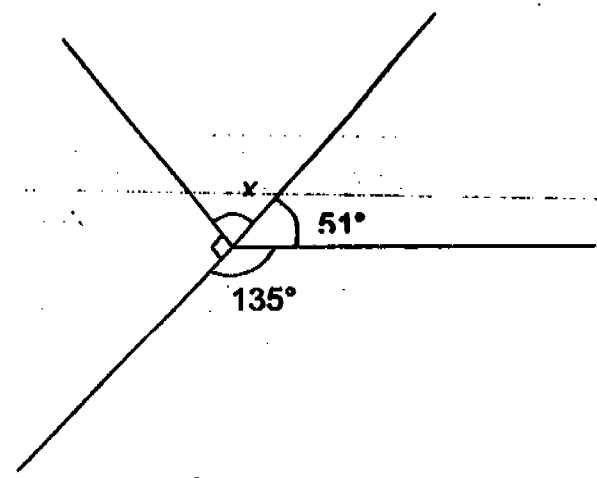
22. The ratio of Kim Hock's money to Lucy's money is 2:3. Lucy has \$4p. How much do they have altogether? Express your answer in terms of p in the simplest form.

Answer : \$ _____

SCORE

23. In this figure, not drawn to scale, find x .

Do not write
in this space



Answer : _____ °

24. What is the last digit in the sum $20 + 21 + 22 + \dots + 99 + 100$?

Answer : _____

25. How many different ways can 4 pupils sit together on a bench?

Answer : _____

26. Chong Lin's weight to Benny's weight is 3:4. What is the ratio of Benny's weight to their total weight?

Answer : _____

SCORE

27. Express 64% as a fraction in its simplest form.

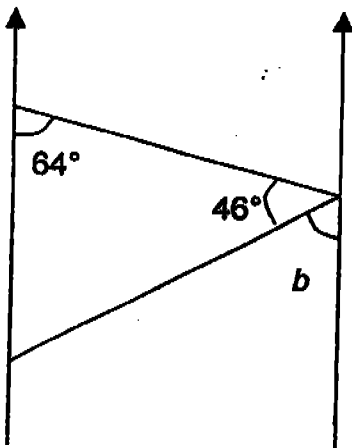
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Answer : _____

28. Given that the diameter of a car's wheel is 70 cm, find the distance it can travel when its wheels have gone through 100 revolutions. Express your answer in metres. [Take $\pi = \frac{22}{7}$]

Answer : _____ m

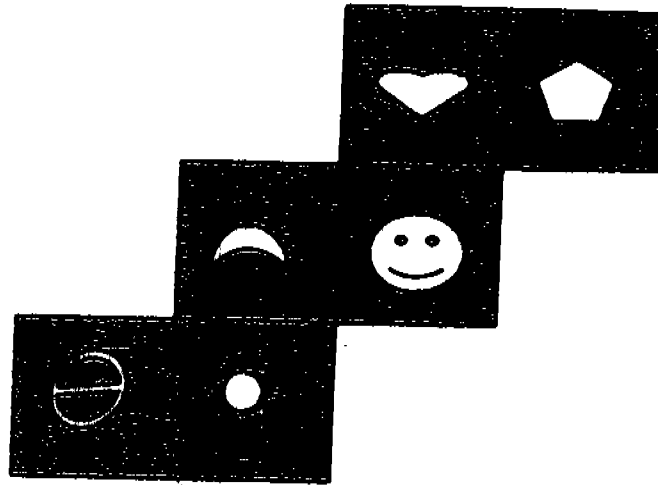
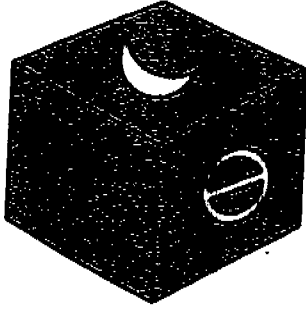
29. The figure below is form by two parallel lines and a triangle. Find the unknown angle b .



Answer : _____ °

SCORE

30. The diagram shows a cube and its net. What is the shape in the missing face?



Do not write
in this space

Answer : _____

31. Find the value of $135 + 24 \div 4 - 2 + 1$

Answer : _____

32. 40% of a number is 64. What is 75% of the number?

Answer : _____

SCORE

33. The parking charges at a Sun Mall car park are as follows:

1 st hour or part thereof	\$1.50
Subsequent half an hour or part thereof	\$1.00

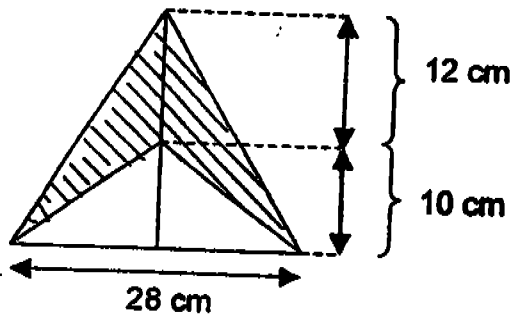
Mr Faizal had to pay \$7.50 for parking his car at the car park. What was the longest duration that he could have parked?

Answer : _____ h

34. A number, when rounded off to the nearest tenths, is 1.4. Find the largest possible number, expressing your answer in two decimal places.

Answer : _____

35. Find the shaded area.



Answer : _____ cm²

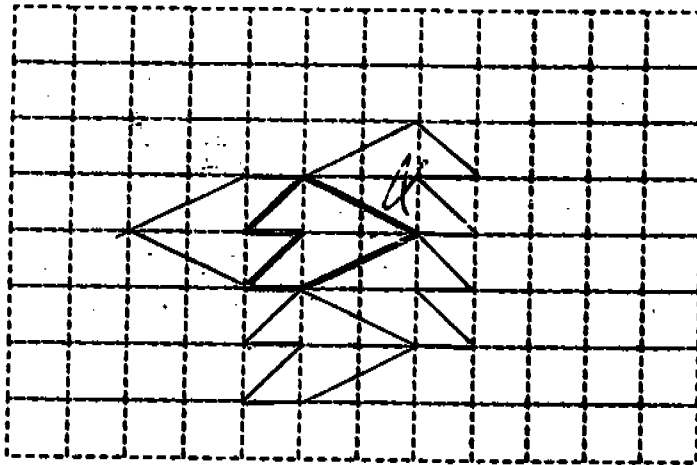
SCORE

Do not write
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For questions 36 to 50, show your working clearly in the space below 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. (55 marks)

Do not write in this space

36. Draw 4 more of the given shape to show a tessellation in the space provided.



[2]

37. How many cubes of sides 3 cm can be placed into a box measuring 10 cm by 9 cm by 6 cm?

Answer: _____ [2]

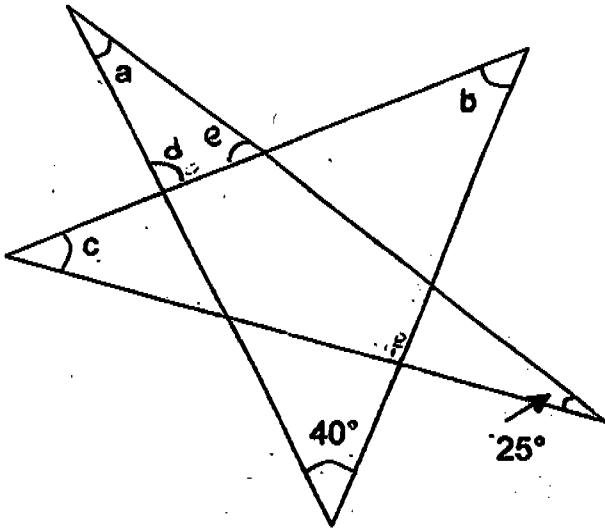
38. The usual price of a shirt is \$38. If Rama buys it at a discount of 30% and pays for it with a \$50 note, how much change should he receive?

Answer: _____ [2]

SCORE

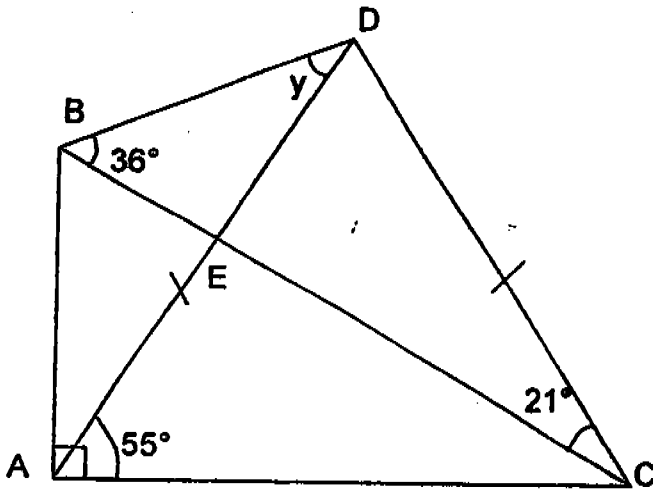
39. The figure below is a star shape formed by many straight lines. Find the sum of $\angle a + \angle b + \angle c$.

Do not write in this space



Answer: _____ [3]

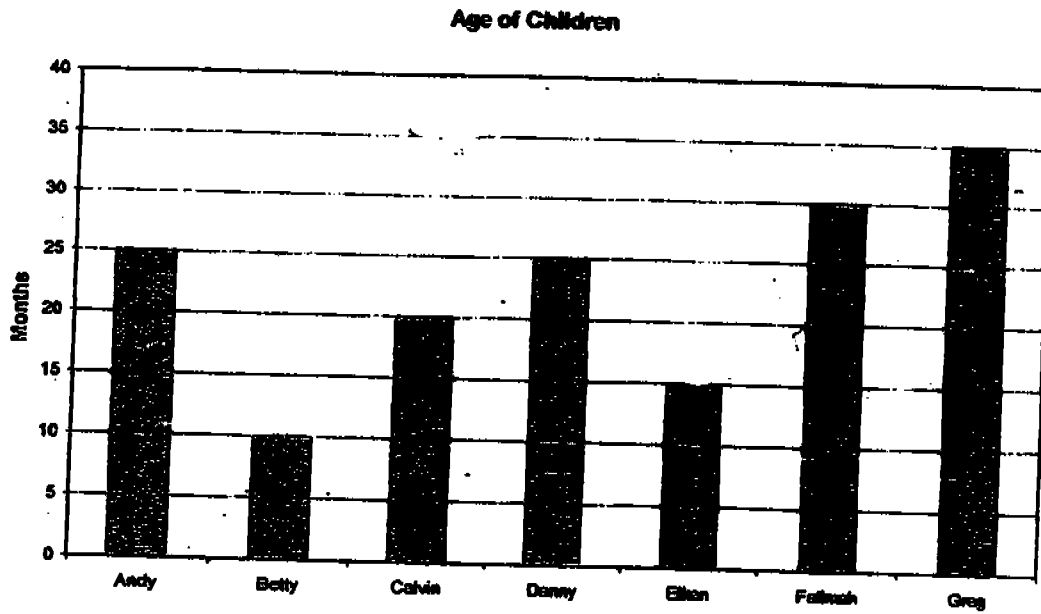
40. ABC is a right-angled triangle. ACD is an isosceles triangle. AED is a straight line. Find the value of $\angle y$.



Answer: _____ [3]

41. The bar chart above shows the age of 7 children in months.

Do not write
in this space



- What is the age of the oldest child in years and months?
- What is the age difference in years between Danny and the youngest child?
- In another 3 year 10 month, what will be Calvin's age in years?

Answer: a) _____ s [1]

b) _____ [1]

c) _____ s [1]

SCORE

42. In a boys' school, $\frac{2}{3}$ of the boys play football and $\frac{1}{4}$ of the boys play table-tennis. $\frac{1}{6}$ of the boys play both games and 180 boys do not play any games at all. Find the number of boys in the school.

Do not write
in this space

Answer: _____ [4]

SCORE

43. A box contained some green markers and red markers in the ratio 3:1. After removing 12 green markers and adding in another 16 red markers, there is now an equal number of green markers and red markers. How many green markers are there at first?

Do not write
in this space

Answer: _____ [4]

SCORE

44. At a party, the ratio of the number of boys to the number of girls is 5:3. If each boy is given 3 sweets while each girl is given 4 sweets, a total of 324 sweets are needed. How many boys and girls are there at the party?

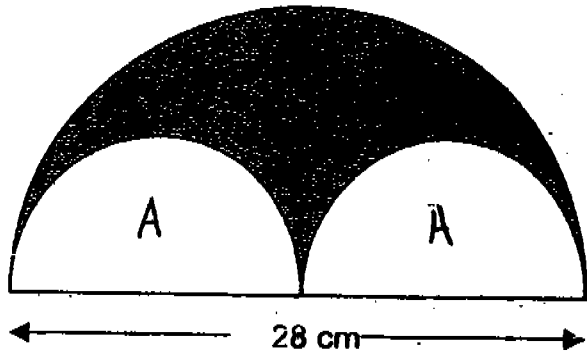
Do not write
in this space

Answer: _____ [4]

SCORE

45. The diagram shows three semicircles. Calculate the perimeter and area of the shaded region. [Take $\pi = \frac{22}{7}$]

Do not write in this space



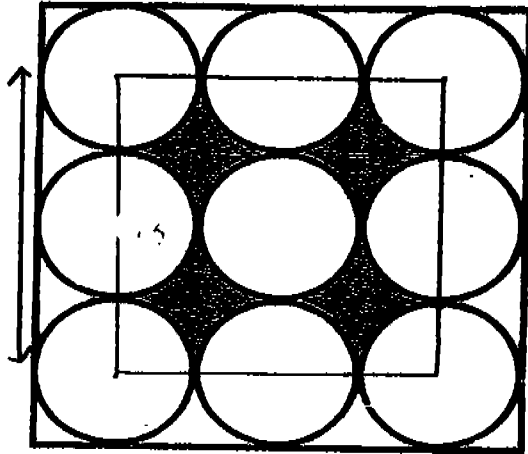
P) _____ [2]

Answer: A) _____ [2]

SCORE

46. The diagram is a square made up of 9 identical circles touching each other. Given that the radius of each circle is 7 cm, find the total area of the shaded parts.

Do not write
in this space



Answer: _____ [4]

SCORE

47. A tank measures 50 cm by 40 cm by 30 cm. It contains 2 identical cubes immersed in 47.568 litres of water. One cube is stacked on top of the other in the water and the water level is $\frac{4}{5}$ of the height of the tank.

- a. What is the volume of each cube?
- b. How far is the top surface of the top cube from the water surface?

Do not write
in this space

Answer: a) _____ [3]

b) _____ [2]

SCORE

48. In a class of 42 pupils, $\frac{2}{5}$ of the boys and 75% of the girls wear spectacles. Given that there are 14 pupils who did not wear spectacles, find the number of boys who wear spectacles.

Do not write
in this space

Answer: _____ [5]

49. At 5.15 pm, both Mr Tan and his wife left their offices and drove along the same direction back home. Mr Tan, whose office was further away from home, drove at an average speed of 80 km/h. His wife drove at an average speed of 60 km/h. The distance between Mr Tan's office and his wife's office is 15 km.

- (a) At what time did Mr Tan overtake his wife?
- (b) If Mr Tan reached home at 6.15 pm, what time would his wife reach home?

Do not write
in this space

Answer: a) _____ [2]

b) _____ [3]

50. Mr Tan and Mr Lee each reared a certain number of chickens in their farm. If Mr Tan sold 60 chickens per day and Mr Lee sold 30 chickens per day, Mr Tan would have left 300 chickens by the time ~~Mr~~^{Mr} Lee finished selling all his chickens. If Mr Tan sold 30 chickens per day and Mr Lee sold 60 chickens per day, Mr Tan would have left 930 chickens by the time Mr Lee finished selling all his chickens. Find the number of chickens Mr Tan has in his farm.

Do not write
in this space

Answer: _____ [5]

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CATHOLIC HIGH SCHOOL
PRELIMINARY EXAMINATION
PRIMARY SIX
MATHEMATICS 2005

- 1) 4
2) 3
3) 2
4) 4
5) 2
6) 1
7) 3
8) 4
9) 4
10) 4
11) 2
12) 3
13) 2
14) 2
15) 2
16) South-West
17) 3 h 50 min
18) 40
19) 80
20) 12
21) 236885
22) $\frac{20p}{3}$
23) 84
24) 0
25) 24
26) 4 : 7
27) 16/25
28) 220
29) 70
30) 3
31) 140
32) 120
33) 4
34) 1.44
35) 168
36)
37) 18 cubes
38) \$ 23.40
39) 115°
40) 53°
41) a) 2 years 11 months b) 1 1/4 months
 c) 5.5 years
42) 720
43) 42
44) 96
45) a) 88 cm b) 154 cm^2
46) 168 cm^2
47) a) 216 cm^3 b) 12 cm
48) 4 boys
49) a) 6 p.m. b) 6.20 p.m.
50) 1140