UNSW
THE UNIVERSITY OF NEW SOUTH WALES
SYDNEY · AUSTRALIA

EDUCATIONAL ASSESSMENT
AUSTRALIA

PAPER D

ICAS

INTERNATIONAL COMPETITIONS AND ASSESSMENTS FOR SCHOOLS

MATHEMATICS
2007

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED.

40 QUESTIONS
TIME ALLOWED: 1 HOUR

STUDENT'S NAME:

Read the instructions on the **ANSWER SHEET** and fill in your
NAME, **SCHOOL** and **OTHER INFORMATION**.
Use a 2B or B pencil.
Do **NOT** use a pen.
Rub out any mistakes completely.

You **MUST** record your answers on the **ANSWER SHEET**.

Mark only **ONE** answer for each question.
Your score will be the number of correct answers.
Marks are **NOT** deducted for incorrect answers.

There are **35 MULTIPLE-CHOICE QUESTIONS** (1–35).
Use the information provided to choose the **BEST** answer from
the four possible options.
On your **ANSWER SHEET** fill in the oval that matches
your answer.

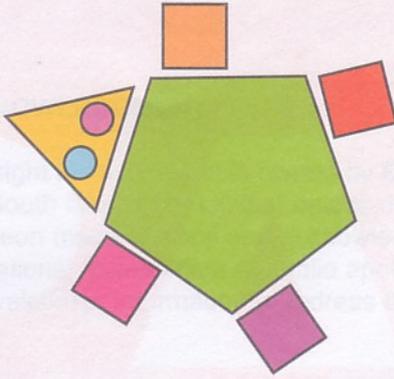There are **5 FREE-RESPONSE QUESTIONS** (36–40).
Write your answer in the boxes provided on the **ANSWER SHEET**.

You may use a ruler and spare paper.
You are **NOT** allowed to use a calculator.

PLEASE SEE BACK COVER FOR A LIST
OF THE YEAR LEVELS THAT SHOULD
SIT THIS PAPER

1. Jane made this picture of a turtle from four different kinds of shape.

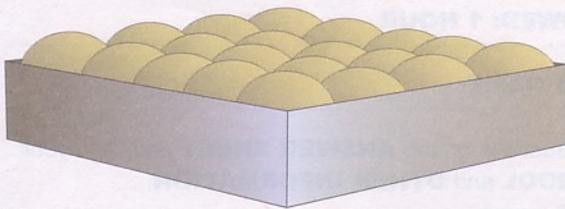Which kind of shape did she **NOT** use?

(A)

(B)

(C)

(D)

2. A baker has stacked some cakes in trays as shown in the picture.

The baker has 3 trays like the one shown.

How many cakes are there altogether?

(A)   4
(B)   5
(C)   60
(D)   75

3. Here is a picture of a tennis ball.
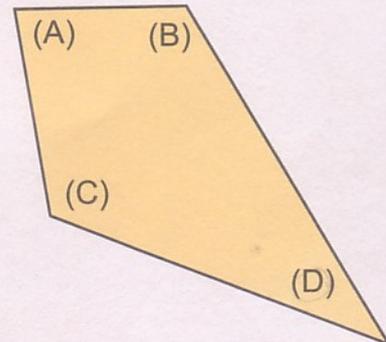

Which word best describes the shape of a ball?

(A)   cube
(B)   cylinder
(C)   prism
(D)   sphere

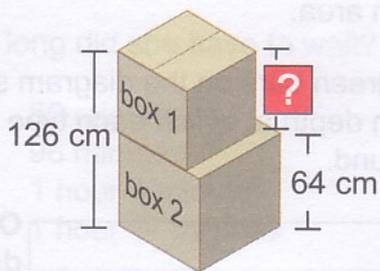4. Dan wants to paint the bottom of a swimming pool.

Which unit would be the best measure of the area to be painted?

(A)   litres
(B)   hectares
(C)   square metres
(D)   square millimetres

5. Which is the smallest angle in this shape?
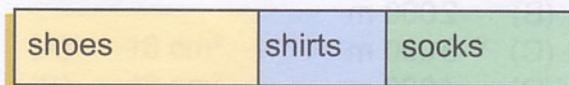
6. The diagram shows the height of a stack of boxes.

126 cm

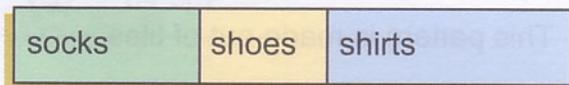box 1

box 2

64 cm

?

What is the height of box 1?

(A)   38 cm
(B)   62 cm
(C)   142 cm
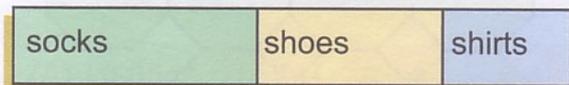(D)   190 cm

7. Karl bought some shoes, socks and shirts.

Which graph shows that Karl spent the most money on shoes?

| shoes | shirts | socks |

(A)

| socks | shoes | shirts |

(B)

| socks | shoes | shirts |

(C)

| shoes | shirts | socks |

(D)

8. Robbie had a small bucket. It could hold 1.3 litres of water.

How many buckets that size would hold closest to 10 litres?

(A)   7
(B)   8
(C)   10
(D)   13

9. 7.35 − 5.85 = ?

(A)   1.20   (B)   1.50

(C)   2.00   (D)   2.50

10. Butterflies are symmetrical.

Here is a picture of half a butterfly.

Which of these is the other half?

(A)   (B)

(C)   (D)

3

11. There are 320 pages in the novel Ailan is reading.

Ailan has finished reading 25% of the pages in the novel.

How many pages has Ailan read?

(A)   25   (B)   40

(C)   80   (D)   295

12. $3 \times \boxed{?} + 6 = 21$

(A)   1
(B)   3
(C)   5
(D)   9

13. Which of these has a mass of about 1 kg?
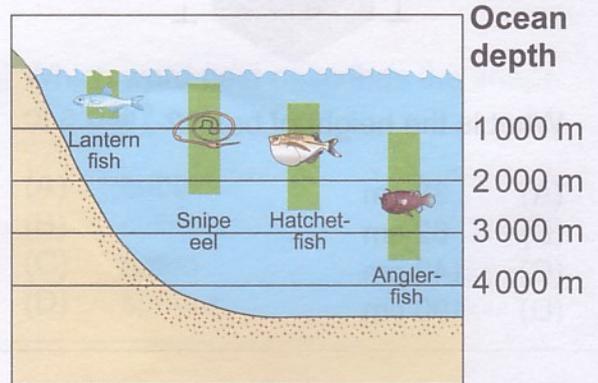

carton of milk   pen
        (A)   (B)

chair   disc
   (C)   (D)

14. This diagram shows information about different types of fish found in a particular ocean area.

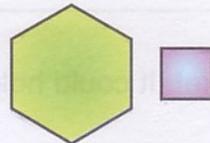The green bars on the diagram show the ocean depth at which each type of fish can be found.

At which ocean depth are three of these different types of fish likely to be found?

(A)   1 000 m
(B)   2 000 m
(C)   3 000 m
(D)   4 000 m

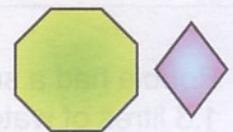15. This pattern is made out of tiles.
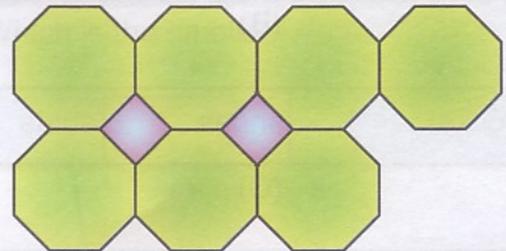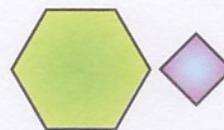

Which two tiles are needed to complete the pattern?

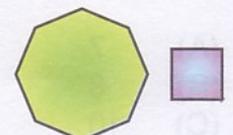   (A)   (B)

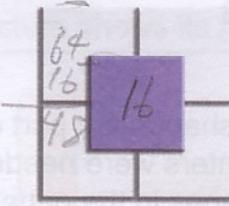   (C)   (D)

16. Rani arrived at the station at 6:08 am. The next train was at 7:04 am.

How long did she have to wait?

(A) 56 minutes
(B) 96 minutes
(C) 1 hour 4 minutes
(D) 1 hour 11 minutes

17. A dark square has been placed on four white squares as shown. The sides of these squares are 4 cm long.
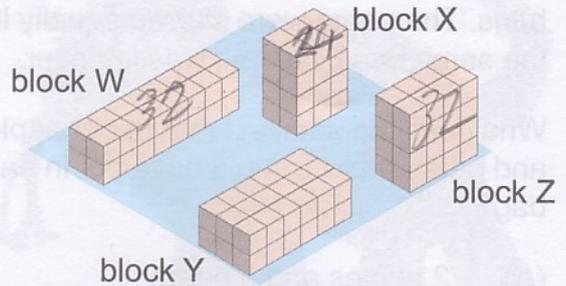

What is the area of the white region surrounding the dark square?

(A) 16 cm²
(B) 48 cm²
(C) 56 cm²
(D) 64 cm²

18. Which set of numbers is arranged in order from largest to smallest?

(A) | 0.054 | 0.045 | 0.14 | 0.4 |

(B) | 0.054 | 0.4 | 0.045 | 0.14 |

(C) | 0.4 | 0.045 | 0.14 | 0.054 |

(D) | 0.4 | 0.14 | 0.054 | 0.045 |
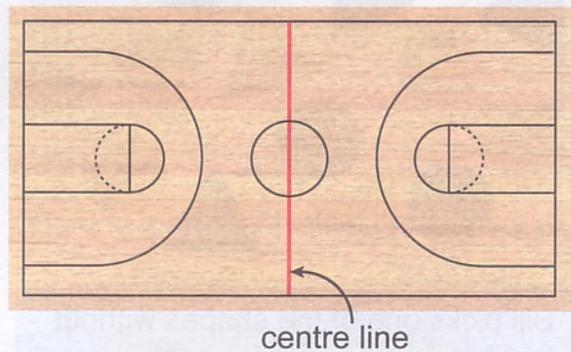
19. The picture shows four blocks made out of cubes. Each block is a rectangular prism.

Which two blocks have the same volume?

(A) X and Z   (B) W and Y

(C) X and Y   (D) W and Z

20. This is a drawing of a basketball court.

centre line

How many black lines in this drawing are parallel to the red centre line?

(A) 2
(B) 3
(C) 4
(D) 5

5

21. Bruno had 12 apples and 18 pears.

The apples were shared equally into some bags. The pears were shared equally into the same bags. No fruit was left over.

What was the smallest number of apples and pears that he could have put in each bag?

(A) 2 apples and 3 pears
(B) 3 apples and 2 pears
(C) 3 apples and 6 pears
(D) 6 apples and 9 pears

22. The picture shows some shapes.
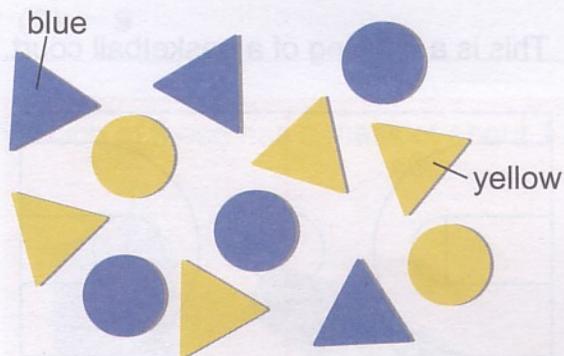
blue

yellow

Bill picks one of the shapes without looking.

What is he most likely to pick?

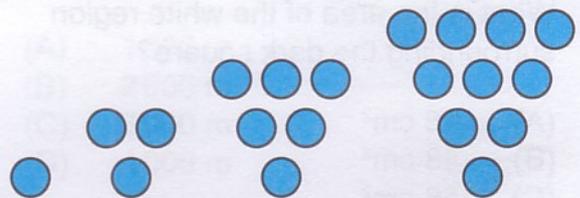(A) a circle
(B) a triangle
(C) a blue shape
(D) a yellow shape

23. 40 571 ÷ 8 = ?

(A) 20 146 remainder 7
(B) 20 071 remainder 7
(C) 5 071 remainder 3
(D) 571 remainder 3

24. What is the difference between 33.3 and 3.33?

(A) 29.97
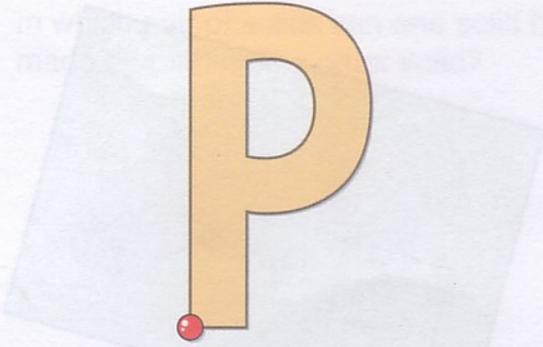(B) 30.97
(C) 30.00
(D) 30.03

25. These four shapes are part of a pattern. Twenty counters were needed to make the first four shapes in the pattern.

How many counters would be needed in total to make the first six shapes in the pattern?
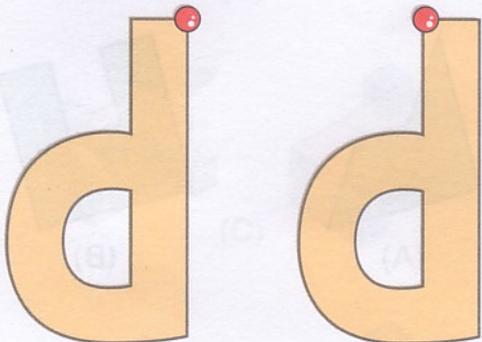
(A) 20
(B) 21
(C) 36
(D) 56

26. Paula cut the letter P out of cardboard and pinned it to her noticeboard as shown.
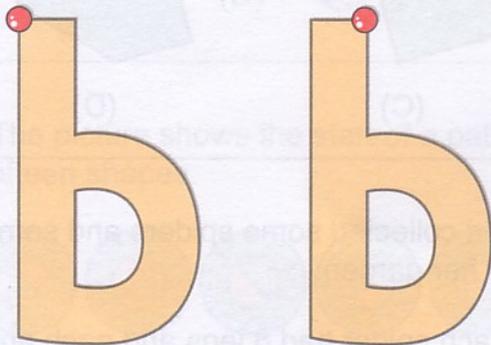

The letter turned 180° around the pin.

Which picture shows its new position?
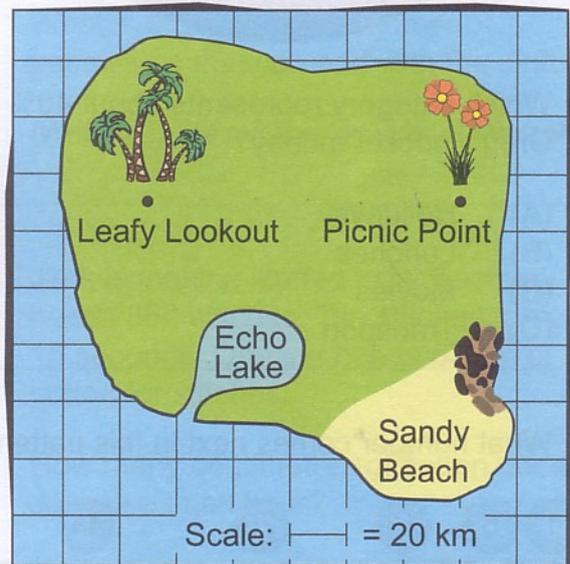

(A)

(B)

(C)

(D)

27. This toy cat has a mass of 41.5 grams.

What is the mass of this cat in **kilograms**?

(A)   0.00415
(B)   0.0415
(C)   0.415
(D)   4.15

28. Here is a map of Holiday Island.
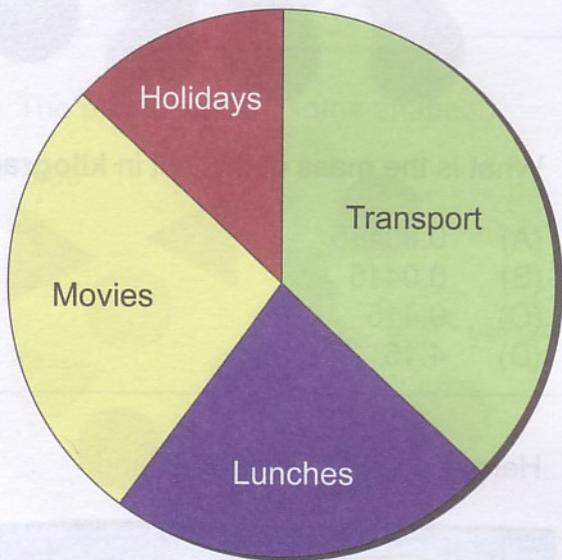

What is the distance from Leafy Lookout to Picnic Point, in kilometres?

(A)   75
(B)   100
(C)   110
(D)   125

29. Chris was exactly 7 years old 15 months ago. Alice was exactly 9 years old 5 months ago.

How much older is Chris than Alice?

(A) 2 years 10 months
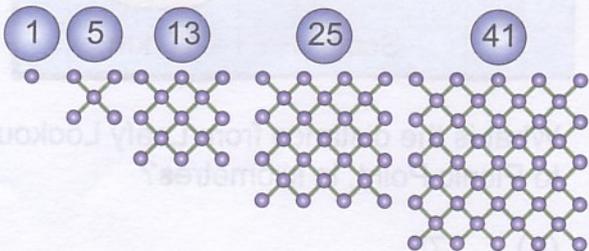(B) 2 years 0 months
(C) 1 year 5 months
(D) 1 year 2 months

30. Greg drew a pie chart of how he spends his pocket money.

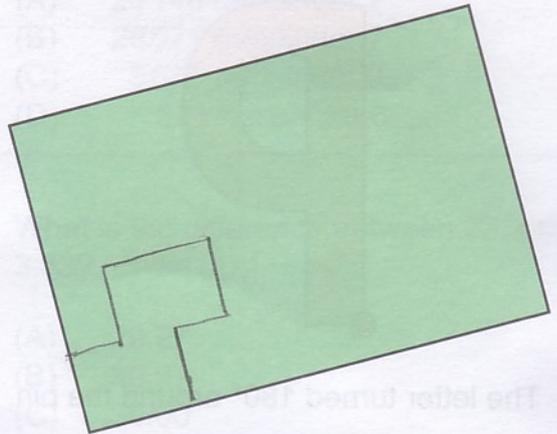Which category represents about 40% of Greg's pocket money?

(A) Holidays
(B) Lunches
(C) Movies
(D) Transport
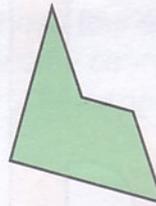
31. What number comes next in this pattern?

(A) 36   (B) 57

(C) 61   (D) 73
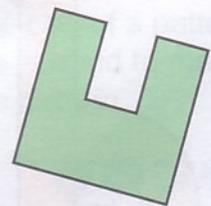
32. Yasmeen wants to cut this rectangle into identical pieces, with no bits left over.
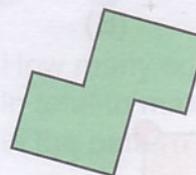

Which shape can the pieces be?
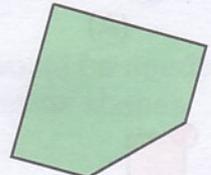

(A)   (B)

(C)   (D)

33. Kiri collected some spiders and some ants in her garden.

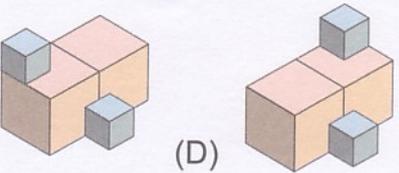Each spider had 8 legs and each ant had 6 legs. She collected 8 animals altogether and they had a total of 58 legs.
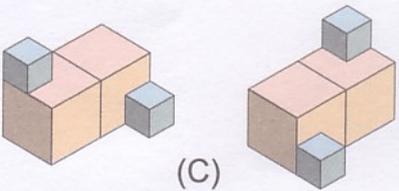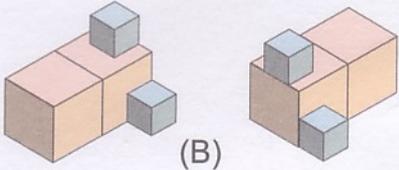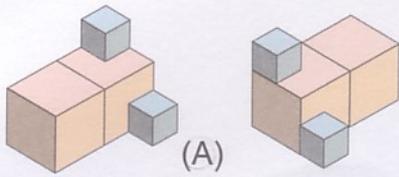
How many ants did Kiri collect?

(A) 2
(B) 3
(C) 5
(D) 8

34. Clara used two small cubes and two large cubes to make some solids.

In which pair of solids can one solid be made by rotating the other solid?

(A)

(B)

(C)

(D)

35. The picture shows the start of a pattern of fifteen shapes.

Which of these shapes is part of the pattern?

(A) (B) (C) (D)

36. The date for 6 June 2006 can be written as 06/06/06.

How many days were there from 02/02/02 to 03/03/03?

(Write only the number on your answer sheet.)

37. A company uses computer passwords that use two upper case letters followed by two digits.


```
> ENTER CODE
LETTER LETTER-DIGIT DIGIT
> EA-76
> HH-35
> LM-44
> NT-20
> OP-11
> RR-07
```
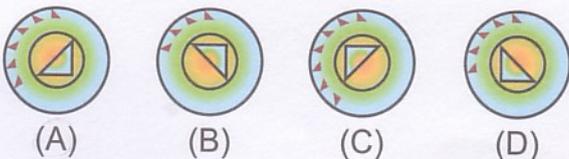
What is the maximum number of passwords that can end with the digits 99?

(Write only the number on your answer sheet.)

38. Jack is making stuffed toys. Each toy needs 360 stitches. Ten stitches take 15 seconds. One toy needs 57 cm of cotton for stitches.

How many centimetres of cotton does Jack use in an hour?
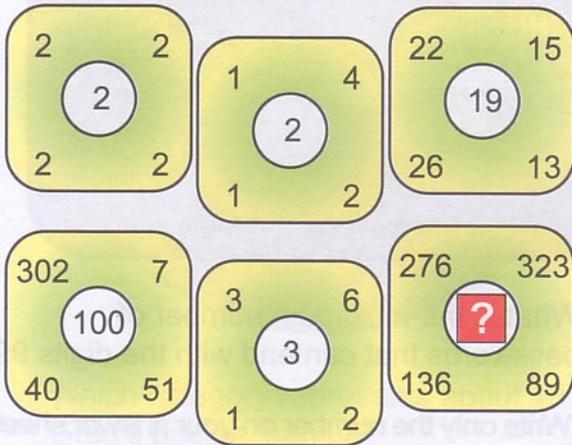
(Write only the number on your answer sheet.)

9

39. Luke's watch shows the wrong time. When he woke at 6:18 am his watch showed the time as 6:30. When he left his house at 7:03 am his watch showed the time as 7:15.

Luke had an appointment with the doctor at 9:45 am. When he arrived his watch showed the time as 10:40.

How many minutes late was he for his appointment?

(Write only the number on your answer sheet.)

40. The numbers in these squares follow a rule.

| 2 2 |
| 2 |
| 2 2 |

| 1 4 |
| 2 |
| 1 2 |

| 22 15 |
| 19 |
| 26 13 |

| 302 7 |
| 100 |
| 40 51 |

| 3 6 |
| 3 |
| 1 2 |

| 276 323 |
| ? |
| 136 89 |

What is the missing number?

(Write only the number on your answer sheet.)