UNSW
THE UNIVERSITY OF NEW SOUTH WALES

eaa
EDUCATIONAL ASSESSMENT AUSTRALIA

PAPER E

INTERNATIONAL COMPETITIONS AND ASSESSMENTS FOR SCHOOLS

MATHEMATICS 2006

40 QUESTIONS
TIME ALLOWED: 1 HOUR

STUDENT'S NAME:

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED.

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**.

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.

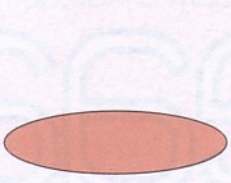
There are **5 FREE-RESPONSE QUESTIONS** (36–40).
Write your answers in the boxes provided on the **ANSWER SHEET**.

Your score will be the number of correct answers.
Marks are **NOT** deducted for incorrect answers.

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. Which oval has the biggest area?



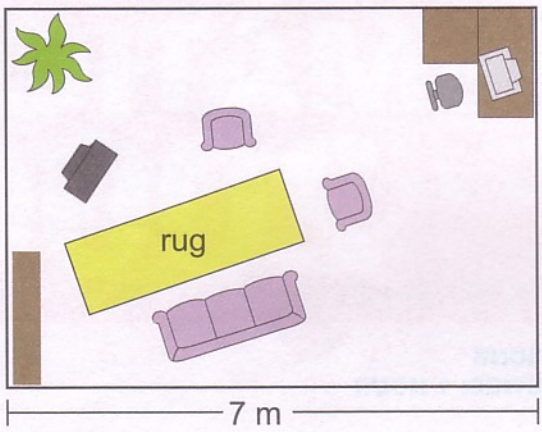
(A)

(B)

(C)

(D)

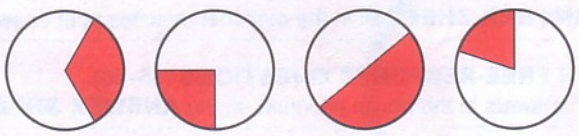
2. The diagram below shows a scale plan of a room.



What is the length of the longest edge of the rug?

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

3. Which circle has one-third shaded?



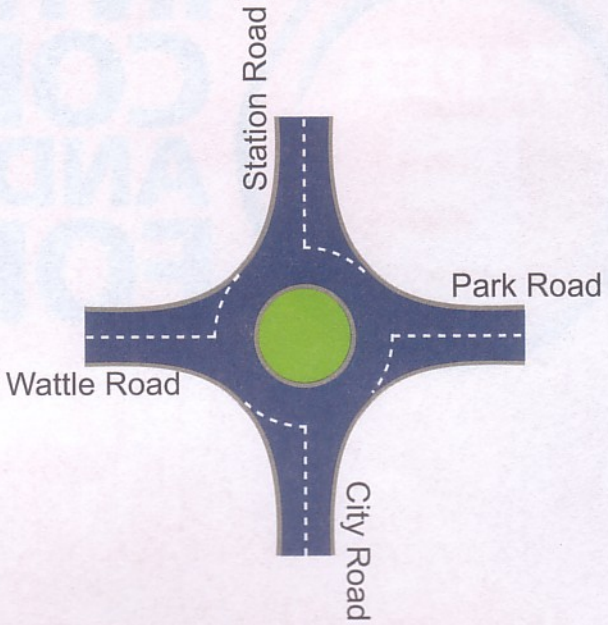
(A) (B) (C) (D)

4. What is the missing number?

123 + ? = 131

(A) 8
(B) 12
(C) 18
(D) 254

5. Here is a diagram of a roundabout.



A car enters the roundabout at Wattle Road. It travels clockwise three-quarters of the way around the roundabout before exiting.

On which road does the car exit the roundabout?

(A) Station
(B) Park
(C) City
(D) Wattle

6. A goat has 2 horns and 4 legs.

How many horns and legs will 15 goats have?

(A) 30 horns and 60 legs
(B) 20 horns and 40 legs
(C) 30 horns and 40 legs
(D) 20 horns and 60 legs

7. This table shows the number of boys and girls in a school.

Boys	137
Girls	164

What is the total number of children in the school?

(A) 201
(B) 291
(C) 301
(D) 391

8. Nicole had 8 identical straws.

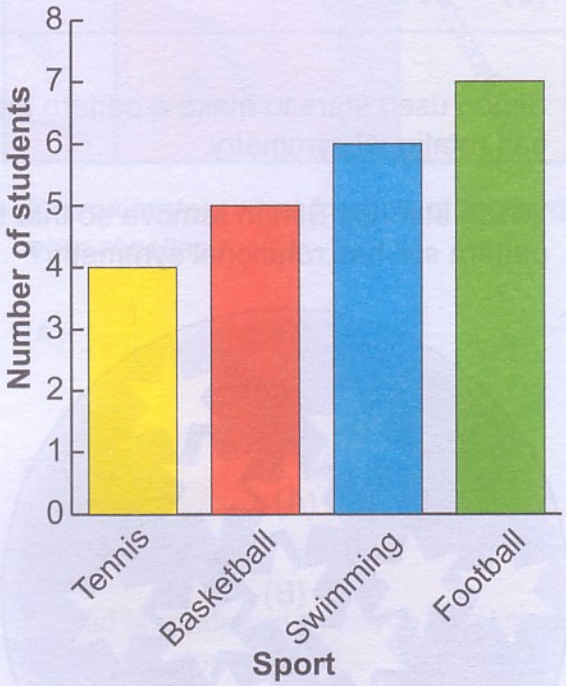
She made an object using all 8 straws without cutting or bending any of them.

Which object did she make?

(A) cube
(B) square pyramid
(C) triangular pyramid
(D) rectangular prism

9. Ms Moody asked each student in her class to name one favourite sport.

She recorded the information on this graph.



How many students were in Ms Moody's class?

(A) 7 (B) 15

(C) 18 (D) 22

10. Which of these letters **CANNOT** have any lines of symmetry?

(A) (B)

(C) (D)

11. What is one-fifth expressed as a percentage?

(A) 5%
(B) 15%
(C) 20%
(D) 25%

12. Simon used stars to make a pattern that has rotational symmetry.

Which star can Simon remove so that this pattern still has rotational symmetry?

13. Which of these numbers is smallest?

(A) 0.1 (B) 0.09

(C) 0.109 (D) 0.0999

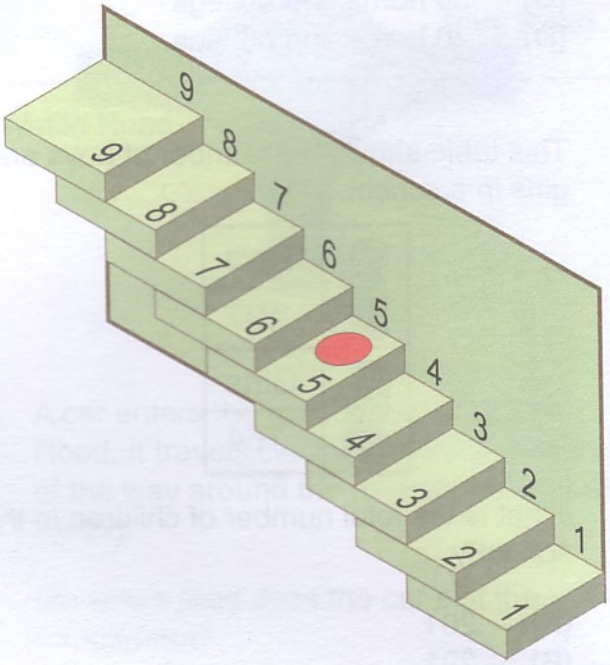
14. This table shows a pattern of numbers.

4	6	8	10	?
16	36	64	100	?

What number should ? be?

(A) 12
(B) 48
(C) 120
(D) 144

15. Gary is on step 5 of these steps.



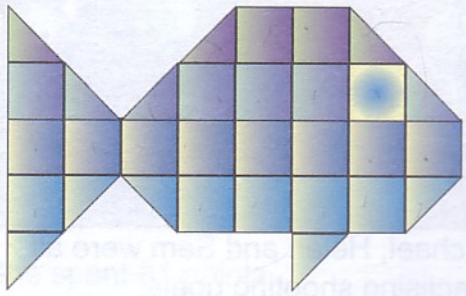
He moves three steps up and then six steps down.

How many steps must he move to get back to step 5?

(A) two steps up
(B) two steps down
(C) three steps up
(D) three steps down

16. Tara has square and triangular tiles.
Each square tile covers an area of 1 cm^2.
Each triangular tile covers an area of 0.5 cm^2.

Tara makes this picture of a fish with the tiles.



What is the area, in cm^2, of Tara's fish?

(A) 22.5
(B) 25.5
(C) 26
(D) 31

17. Mei-Ling painted a symmetrical picture of a lizard.

This is one half of Mei-Ling's picture.

Which of these is the other half of Mei-Ling's picture?

(A)

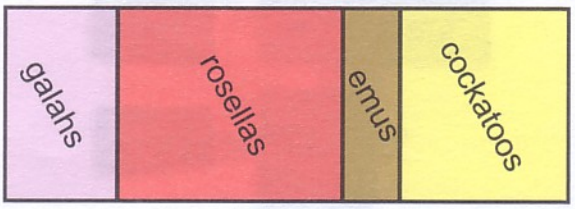
(B)

(C)

(D)

18. Bill went on a walk in an Australian national park.

He drew a graph to show the proportion of different birds he saw on his walk.



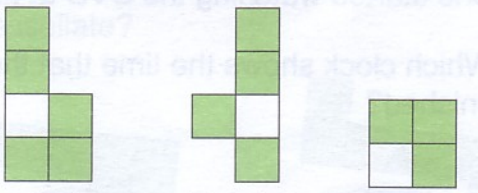
Approximately what fraction of the birds were rosellas?

(A) $\frac{1}{4}$ (B) $\frac{2}{5}$

(C) $\frac{2}{4}$ (D) $\frac{3}{5}$

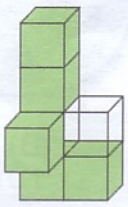
19. A solid is made out of seven blocks, two of which are clear plastic.

Here are three views of the solid.

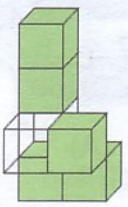


front view side view top view

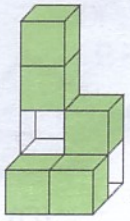
Which of these is the solid?



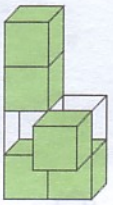
(A)



(B)

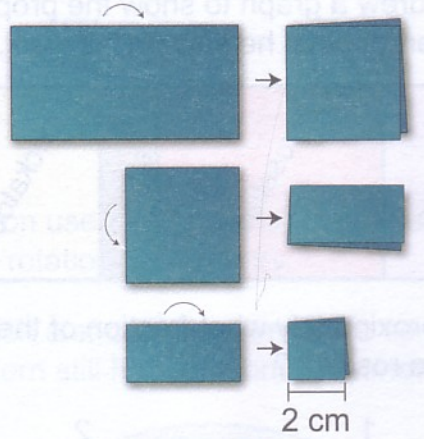


(C)



(D)

20. Pam folded a rectangle of cloth in half 3 times to make a square of side 2 centimetres.



What was the area of the original rectangle of cloth?

(A) 8 cm^2 (B) 16 cm^2

(C) 32 cm^2 (D) 64 cm^2

21. Jaya watched a DVD for 1 hour and 45 minutes.

She started watching the DVD at 2:55.

Which clock shows the time that the DVD finished?

(A)

(B)

(C)

(D)

22. Tony is using a car while on holiday in Britain.

It cost Tony £38.00 for 40 litres of fuel.

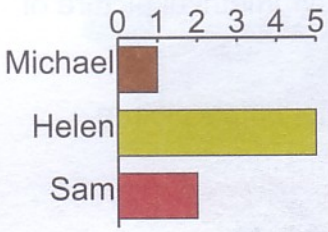
How much does it cost for 1 litre of fuel?

(A) £0.92
(B) £0.95
(C) £1.52
(D) £2.00

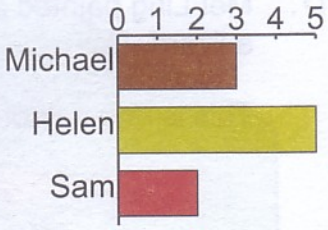
23. Michael, Helen and Sam were all practising shooting goals.

Helen scored more goals than Michael and Sam together. Michael scored more goals than Sam.

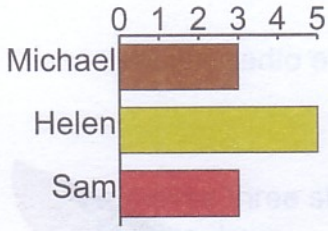
Which of these could be a correct bar chart showing the number of goals they scored?



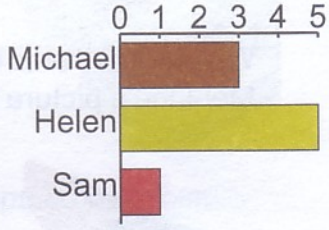
(A)



(B)



(C)



(D)

24. Shani rounded a number correct to two decimal places and wrote down 92.57.

Which of these numbers rounds to give 92.57?

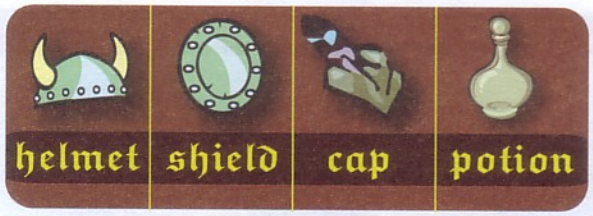
(A) 92.5777
(B) 92.5759
(C) 92.5656
(D) 92.5628

25. Ellen played a computer game. In the game she spent points to buy things.

Ellen bought three of the things shown.

She spent 81 points.

Which thing did Ellen **NOT** buy?



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

26. Judith shaded this grid using the rule (multiples of 3) + 2.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

She shaded another grid with a new rule.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

What was the new rule?

(A) (multiples of 2) + 1
(B) (multiples of 3) + 1
(C) (multiples of 4) – 1
(D) (multiples of 5) – 2

27. Kent has a recipe for salad dressing that uses 12 spoons of oil and 3 spoons of vinegar.

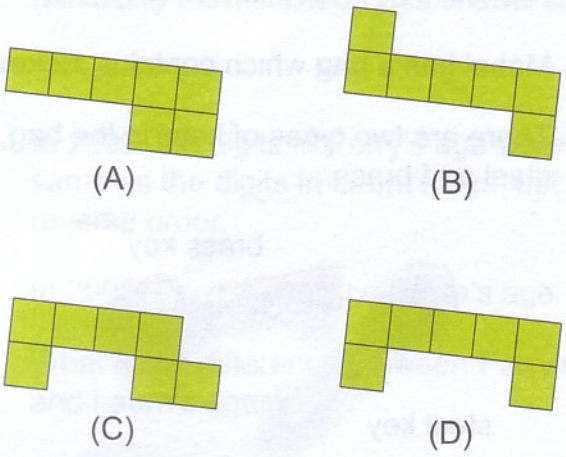
Kent decides to use $\frac{2}{3}$ of the amount of oil, but the same amount of vinegar.

What fraction of Kent's dressing will be vinegar?

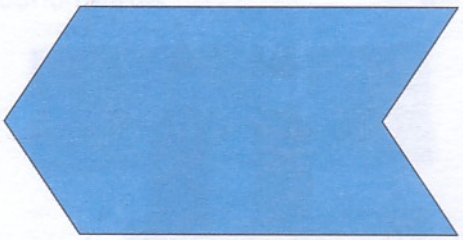
(A) $\frac{3}{11}$ (B) $\frac{1}{3}$

(C) $\frac{3}{8}$ (D) $\frac{8}{11}$

28. Which of these shapes does **NOT** tessellate?

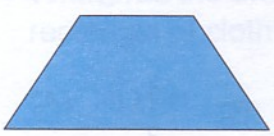


29. This shape has been made out of **four** identical tiles exactly.



The tiles are blue on one side and red on the other.

Which of these tiles could have been used?



(A)

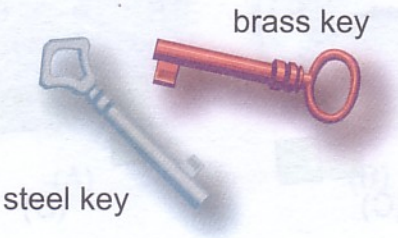
(B)

(C)

(D)

30. Mabel has a bag which contains 12 keys.

There are two types of keys in the bag, steel and brass.



Mabel has a 1 in 3 chance of drawing out a brass key.

How many steel keys are there in the bag?

(A) 3
(B) 4
(C) 8
(D) 9

31. Look at this pattern of numbers.

$7 \times 11 \times 13 \times 1 = 1001$

$7 \times 11 \times 13 \times 2 = 2002$

$7 \times 11 \times 13 \times 3 = 3003$

What is $49 \times 55 \times 26$?

(A) 35035 (B) 49049

(C) 70007 (D) 70070

32. Georgia drove from Ceduna to Kalgoorlie.

This drive took her $18\frac{1}{4}$ hours.
Kalgoorlie is $1\frac{1}{2}$ hours behind the time in Ceduna.

Georgia started driving from Ceduna at 2:45 am.

What time was it in Kalgoorlie when she arrived?

(A) 7:30 pm
(B) 7:45 pm
(C) 9:00 pm
(D) 10:30 pm

33. Sam and Kevin are bricklayers.

Sam lays 150 bricks in 60 minutes.
Kevin lays 20 bricks in 10 minutes.

Working together, how many minutes will it take Sam and Kevin to lay 180 bricks?

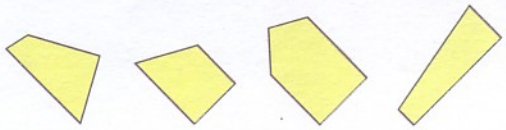
(A) 25 (B) 40

(C) 70 (D) 100

34. A square was cut into four pieces.

The shaded triangle is one of the pieces.

Which of these shapes is **NOT** one of the other three pieces of the square?



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

35. Pedro and Alice raced two model trains along two straight tracks.

Pedro's train travelled 7.5 metres every minute. Alice's train travelled 7.5 cm every second.

How many centimetres had Alice's train travelled when Pedro's train had travelled 2.75 metres?

(A) 165 cm
(B) 110 cm
(C) 22 cm
(D) 0 cm

QUESTIONS 36 TO 40 ARE FREE RESPONSE.

36. Tom has these three number cards.

Tom uses all three cards to make a 3-digit number.

What is the mean (average) of all the different numbers Tom can make in this way?

(Write only the number on your answer sheet.)

37. Andy appeared in a TV quiz show. He won 200 points for each correct answer and lost 300 points for each incorrect answer. After 30 questions his score was zero.

How many of the 30 questions did he answer correctly?

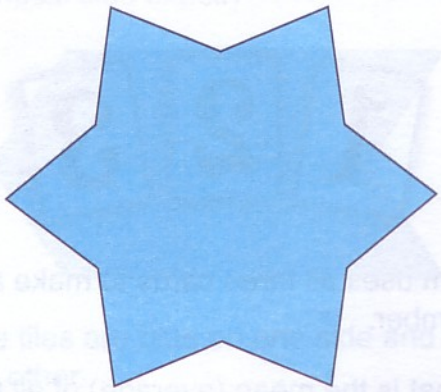
(Write only the number on your answer sheet.)

38. In 2006, the digits in Perry's age were the same as the digits in Laura's age, but in reverse order.
In 2005, Perry was twice Laura's age.

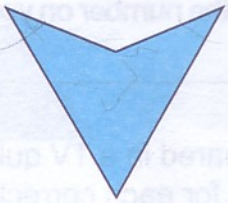
What is the difference between Perry's and Laura's ages?

(Write only the number on your answer sheet.)

39. This star shape has 6 lines of symmetry.



The shape can be cut into 6 identical quadrilaterals that look like this.



The smallest angle in the quadrilateral is 38°.

How many degrees is the largest angle in the quadrilateral?

(Write only the number on your answer sheet.)

40. Ollie is waiting for a bus that will arrive at 8:30.

When Ollie first looked at his watch it was 8:12.

When he looked at his watch a short while later, the minute hand had turned 72°.

How many more **seconds** does Ollie have to wait for the bus?

(Write only the number on your answer sheet.)

END OF PAPER

This page may be used for working.

THE FOLLOWING YEAR LEVELS SHOULD SIT THIS PAPER:

AUSTRALIA: Year 7
BRUNEI: Form 1
INDONESIA: Year 8
MALAYSIA: Form 1
NEW ZEALAND: Year 8
PACIFIC: Year 7
SINGAPORE: Primary 6
SOUTH AFRICA: Grade 7