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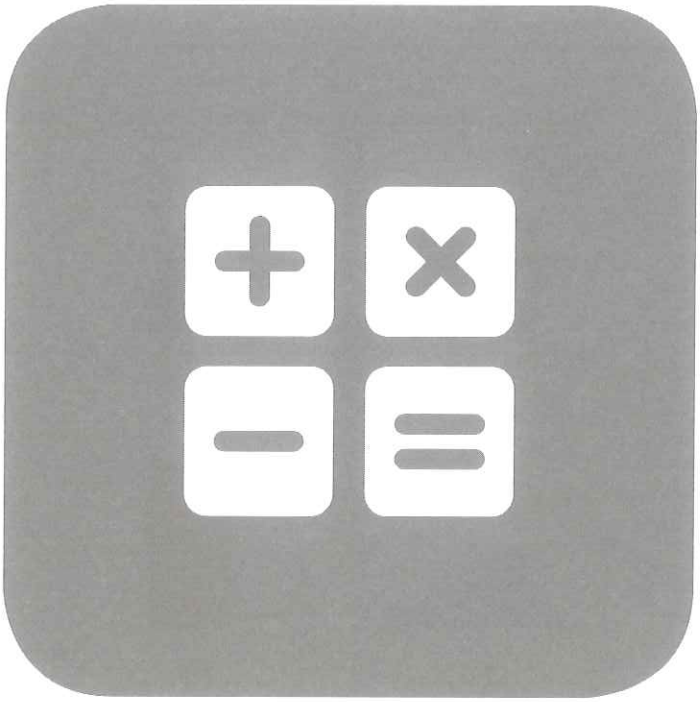
THE UNIVERSITY OF NEW SOUTH WALES
SYDNEY • AUSTRALIA

PAPER C



2012 ICAS

International Competitions and Assessments for Schools

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED.

40 QUESTIONS

TIME ALLOWED: 45 MINUTES

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**.

MATHEMATICS

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 **40 MULTIPLE-CHOICE QUESTIONS** (1–40).
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.

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

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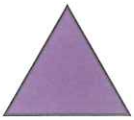
1. What is the next number in this pattern?

3, 6, 12, 24, ?

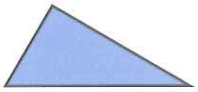
(A) 30
(B) 36
(C) 42
(D) 48

2. Which of these shapes has only one right angle?

(A)



(B)



(C)

(D)

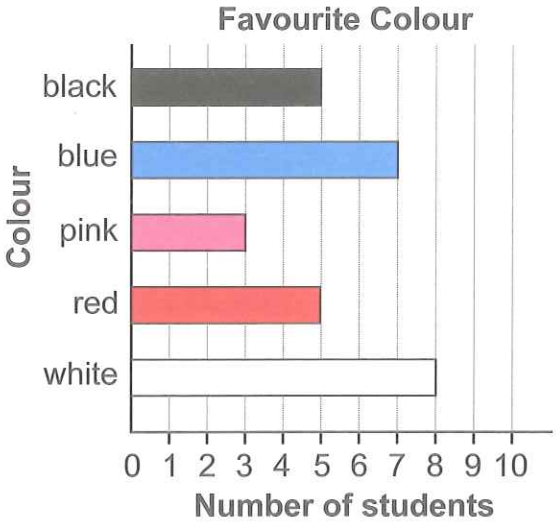
3. Mike was facing north. He turned 180°.

Which direction was Mike facing when he finished the turn?

(A) north
(B) south
(C) east
(D) west

4. Students in a class were surveyed about their favourite colour. Every student chose one colour.

The graph shows the results.

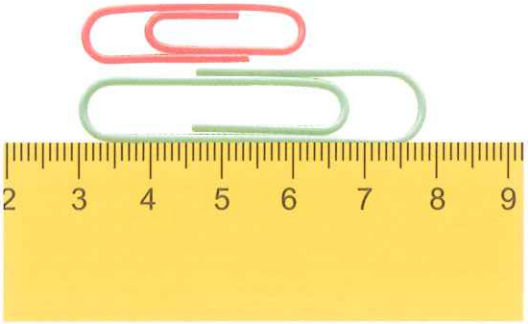


How many students did **NOT** choose pink or red?

(A) 8
(B) 20
(C) 23
(D) 25

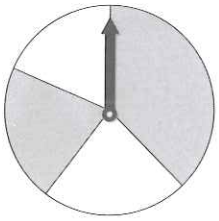
5. Joe measured two paperclips using a ruler marked in centimetres.

Using the ruler in the photo, how much longer than the small paperclip is the big paperclip?

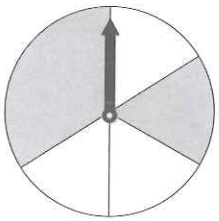


(A) 1.7 cm
(B) 2.0 cm
(C) 3.1 cm
(D) 7.8 cm

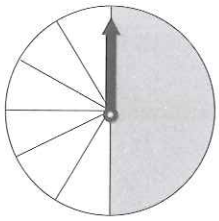
6. Which of the following spinners has more chance of landing on white than on grey?



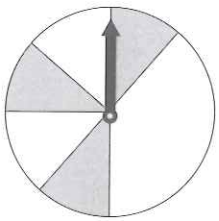
(A)



(B)



(C)



(D)

7. Sasi bought some fruit.

174 grams

522 grams

386 grams

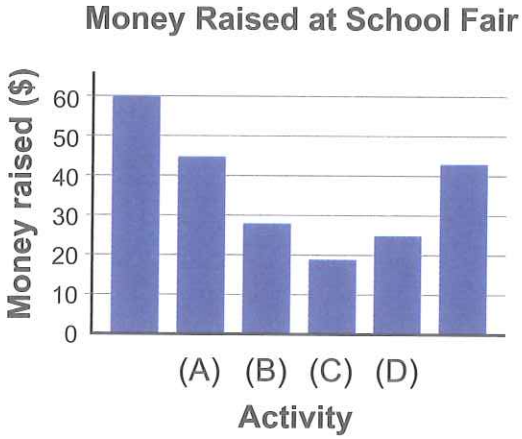
What is the total mass of Sasi's fruit, in kilograms?

(A) 1.082
(B) 1.82
(C) 10.82
(D) 1082

8. The table shows how much money was raised from different activities at a school fair.

Activity	Money Raised ($)
Cake stall	45
Toy sale	25
Food stall	60
Face painting	28
Book stall	43
Sack race	19

Which column on the graph shows the amount of money raised from face painting?



9. Lin exercises from 6:45 am to 7:10 am every day of the week.

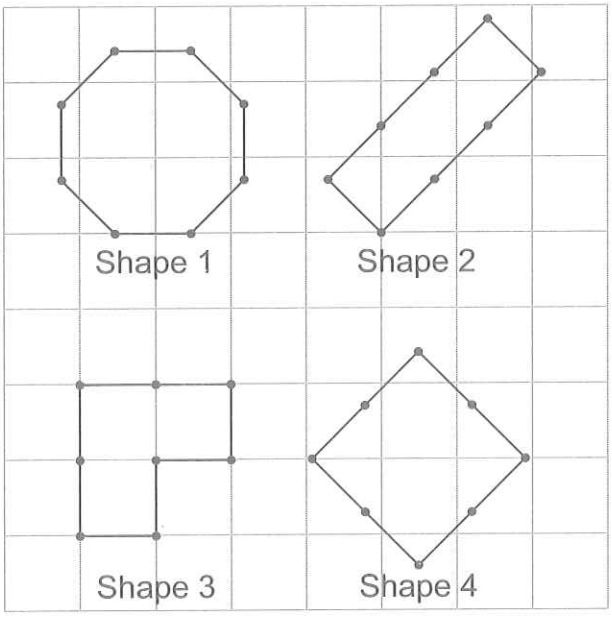
For how long does Lin exercise each week?

(A) 2 hours 55 minutes
(B) 2 hours 15 minutes
(C) 1 hour 45 minutes
(D) 1 hour 25 minutes

10. This rabbit's playpen is made of eight panels of equal size.

The panels can be set up to make different shapes.

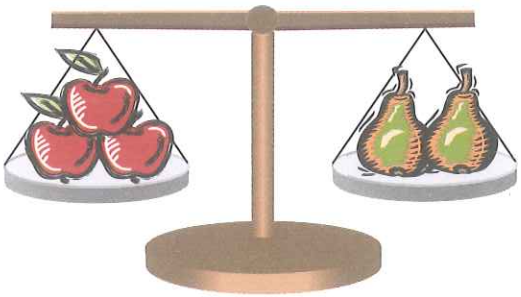
The top views of four of these shapes are shown on a square grid.



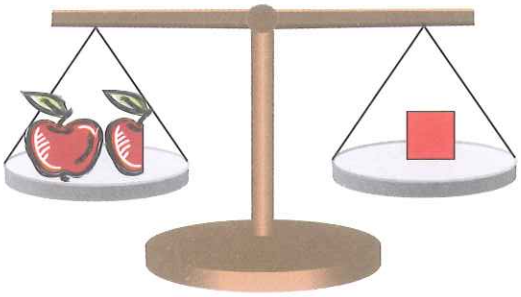
Which shape gives the rabbit the greatest area?

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

11. Jeremy put some apples and pears on a set of scales.



Which picture could replace the square?



(A) 

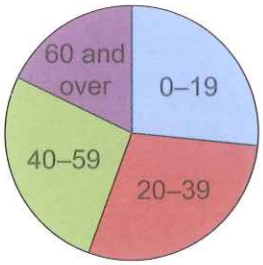
(B) 

(C) 

(D) 

12. The pie graph shows the proportion of Australian people in different age groups.

The Age of Australians



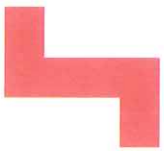
The graph shows that more than half of Australians are aged

(A) under 20.
(B) under 40.
(C) 40 and over.
(D) 60 and over.

13. Fadi drew this shape.

Which of these shows Fadi's shape flipped and turned?

(A)



(B)

(C)

(D)

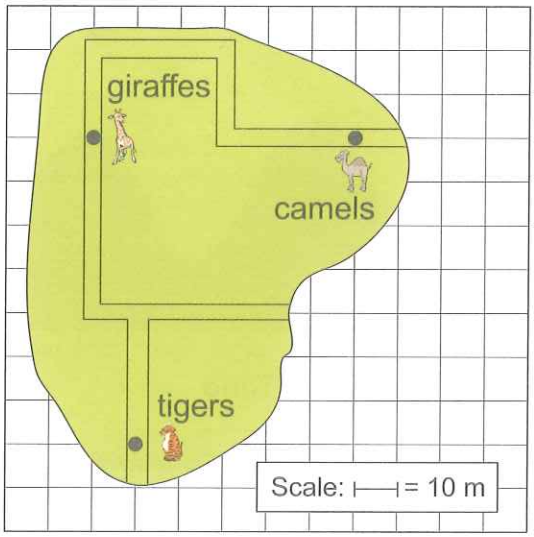
14. Joe wrote this calculation.

139 × 6 - 134

Which of these will give the same answer?

(A) 139 × 7 - 5
(B) 139 × 5 + 5
(C) 140 × 5 + 5
(D) 140 × 6 - 128

15. Lin and Ann went to the zoo. They used a map that shows a part of the zoo.



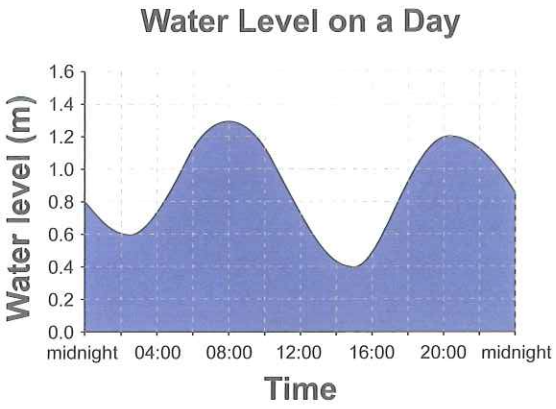
Lin and Ann are at the giraffe enclosure.

Lin walked to see the camels. Ann walked to see the tigers. They both walked along the pathway.

How many metres more than Ann did Lin walk?

(A) 2
(B) 8
(C) 10
(D) 20

16. The chart shows how the water level in a harbour changed on a particular day.



What was the difference between the highest and the lowest water level?

(A) 0.1 m
(B) 0.7 m
(C) 0.9 m
(D) 1.3 m

17. The country of Yeno has a currency called 'yenom'. They have coins of the following types:

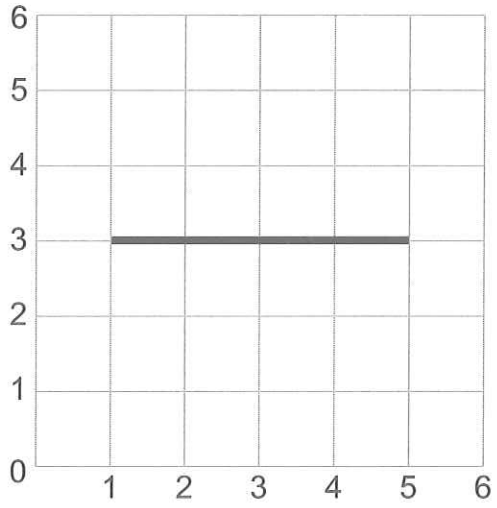
- 1 yenom
- 2 yenoms
- 5 yenoms
- 10 yenoms
- 20 yenoms
- 50 yenoms.

Adam bought an item that cost 59 yenoms and no change was required.

What is the smallest number of coins Adam could have used to pay?

(A) 6
(B) 5
(C) 4
(D) 3

18. Mike drew a black line on this grid from (1, 3) to (5, 3).



Which of the following pairs of points when joined makes a line which has the same length as Mike's line?

(A) (1, 2) to (4, 2)
(B) (1, 4) to (4, 1)
(C) (2, 0) to (6, 4)
(D) (3, 2) to (3, 6)

19. Ann has seedlings like the one shown.

She wants to plant the seedlings in 4 rows with the same number of seedlings in each row. Ann will have 3 seedlings left over.

How many seedlings could Ann have?

(A) 12
(B) 13
(C) 16
(D) 19

20. This is what the angle between the minute hand and the hour hand of the clock looks like at 5:15.

5:15

At which of these times is the angle between the hands of the clock the smallest?

(A) 6:45

(B) 3:30

(C) 12:15

(D) 9:00

21. In Mrs Smith's class there are 10 boys and 11 girls. Each student brought 2 strawberries and 12 blueberries to a picnic.

How many berries did the students bring altogether?

(A) 35
(B) 152
(C) 294
(D) 300

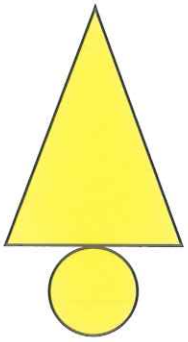
22. The number 12 is divisible by 3 because 12 can be divided by 3 with no remainder.

A prime number is a number greater than 1 that is only divisible by 1 and itself. The first four prime numbers are 2, 3, 5 and 7.

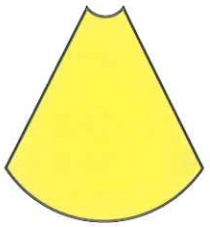
How many prime numbers are there between 20 and 40?

(A) 4
(B) 5
(C) 6
(D) 8

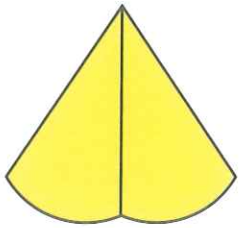
23. Which of these is the net of a cone with no base?



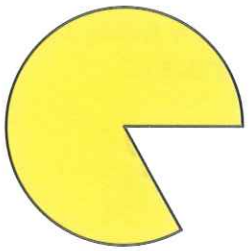
(A)



(B)



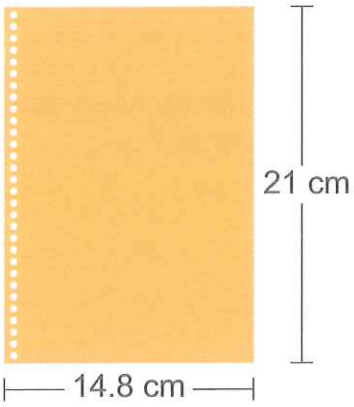
(C)



(D)

24. Ann used a book to measure the area of her desk.

Here is a picture of Ann's book.



She found that the area of her desk is 12 times greater than the area of her book.

Which of the following gives the area of Ann's desk, in cm^2?

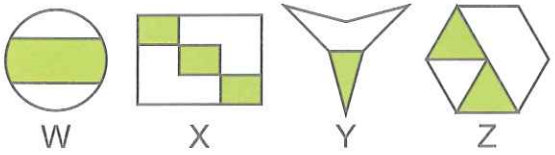
(A) $14.8 + 21 + 12$
(B) $14.8 \times 21 \times 12$
(C) $(14.8 + 21) \times 12$
(D) $2 \times (14.8 + 21) \times 12$

25. In a theatre, Indra is sitting in the 9th row from the front. This row is also the 15th row from the back.

How many rows of seats are there in this theatre?

(A) 6
(B) 23
(C) 24
(D) 25

26. Which two pictures are one-third shaded?



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

27. A baby crawled 4 metres in 10 seconds.

At what speed did the baby crawl?

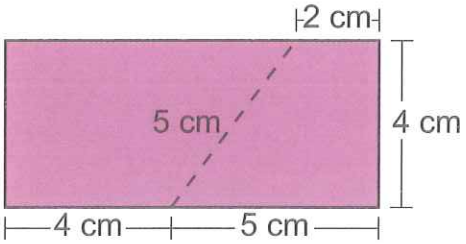
(A) 4 centimetres per second
(B) 25 centimetres per second
(C) 40 centimetres per second
(D) 100 centimetres per second

28. $12 \times ? = 3$

(A) $\frac{1}{4}$ (B) $\frac{1}{8}$

(C) 4 (D) 36

29. By cutting along the dashed line, this rectangle can be divided into two pieces.



The pieces are then rearranged and joined to form a parallelogram that is not a rectangle.

What is the perimeter of the parallelogram?

(A) 20 cm
(B) 26 cm
(C) 28 cm
(D) 32 cm

30. Mike went to the cinema. He arrived at 1:50 pm and had to leave at 3:40 pm.

Here is the timetable for the movies showing on that day.

Clappy Hands
Length: 2 h 10 min
Showing at: 1:50, 3:40

The Watchamacallit
Length: 1 h 29 min
Showing at: 1:40, 2:20, 3:50

Monotonous Monday
Length: 1 h 39 min
Showing at: 1:00, 2:00

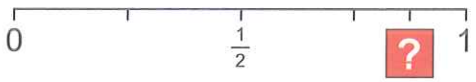
Anyone Can Bake Beans
Length: 1 h 50 min
Showing at: 1:40, 3:30, 5:20

Mike watched one complete movie.

Which movie did Mike watch?

(A) *Clappy Hands*
(B) *The Watchamacallit*
(C) *Monotonous Monday*
(D) *Anyone Can Bake Beans*

31. What number should ? be?



(A) $\frac{4}{5}$ (B) $\frac{3}{4}$

(C) $\frac{7}{8}$ (D) $\frac{9}{10}$

32. Sunil had a cake for his party.

At the party, $\frac{3}{5}$ of the cake was eaten.

What was left over weighed 600 g.

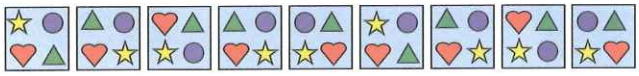
What was the weight of the whole cake?

(A) 240 g
(B) 360 g
(C) 1 kg
(D) 1.5 kg

33. $4 \times 9 - 6 \times 3 + 6 =$?

(A) 24
(B) 42
(C) 96
(D) 108

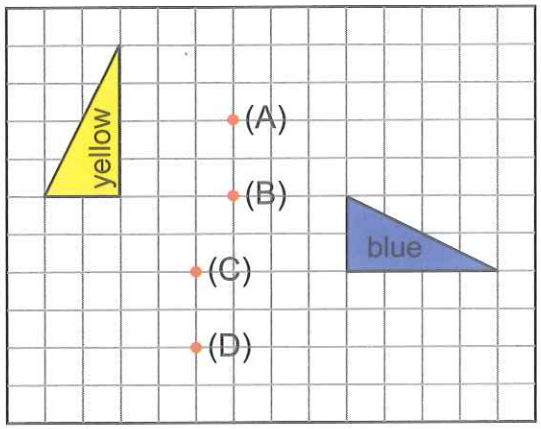
34. Which card should be removed so the remaining cards make a pattern?



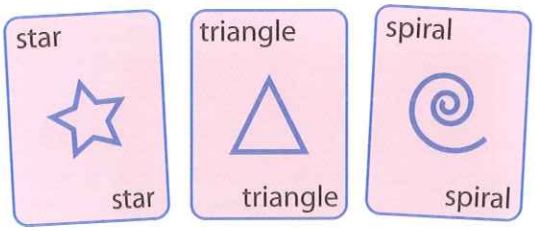
(A) (B) (C) (D)

35. Mike wants to rotate the yellow triangle around a point so that it exactly covers the blue triangle.

Around which point on the square grid must Mike rotate the yellow triangle?

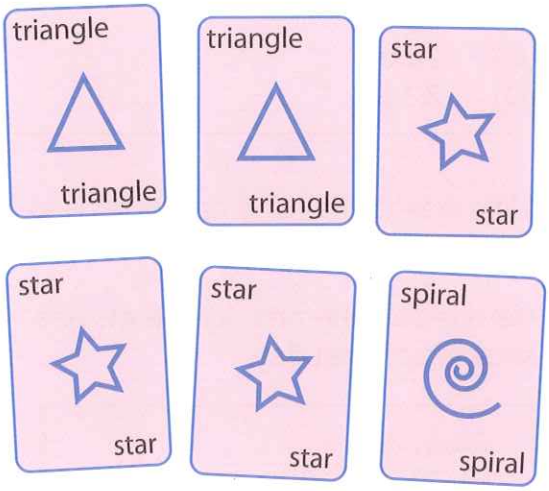


36. Josh is playing a game that has three types of cards.



The triangle card is worth three times as many points as the star card. The spiral card is worth three times as many points as the triangle card.

These six cards are worth a total of 90 points.



How many points is one spiral card worth?

(A) 5
(B) 15
(C) 30
(D) 45

37. Ann, Sasi, Lin and Mia went to a fair.

Ann had \$5 and spent \$3.50.

Sasi had \$10 and spent \$7.50.

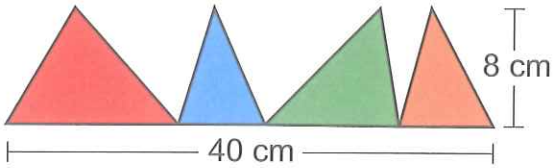
Lin had \$15 and spent \$10.50.

Mia had \$20 and spent \$10.

Which girl spent the largest fraction of the money she had?

(A) Ann
(B) Sasi
(C) Lin
(D) Mia

38. Mike made this design.

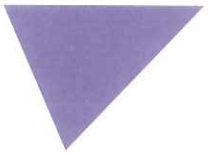


NOT TO SCALE

What is the total coloured area of the design, in cm^2?

(A) 80
(B) 96
(C) 160
(D) 320

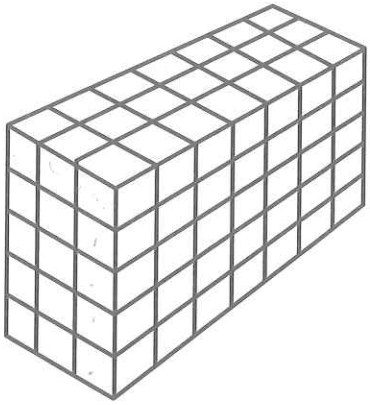
39. Ann has some triangles that are identical to the triangle shown.



What is the smallest number of triangles that can be fitted together to make a larger triangle?

(A) 2
(B) 3
(C) 4
(D) 9

40. This is a drawing of a solid prism which was built using identical cubes.



Some of the cubes used to build the prism cannot be seen in the drawing.

How many cubes cannot be seen in the drawing?

(A) 34
(B) 48
(C) 57
(D) 60

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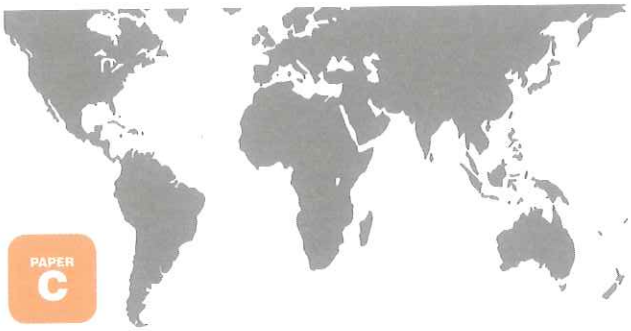
The following year levels should sit THIS Paper:

Australia	Year 5
Brunei	Primary 5
Indonesia	Year 6
Malaysia	Standard 5
New Zealand	Year 6
Pacific	Year 5
Singapore	Primary 4
South Africa	Grade 5



PAPER **C**

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M | 2012 Mathematics Answer Keys

ICAS
International Competitions and Assessments for Schools

Question Number	Paper A	Paper B	Paper C	Paper D	Paper E	Paper F	Papers G & H	Papers I & J
1	B	A	D	D	D	C	A	B
2	B	A	C	A	B	A	C	B
3	A	D	B	C	A	C	C	D
4	A	D	B	B	B	A	B	B
5	D	B	A	A	D	B	B	B
6	D	D	D	C	D	B	A	A
7	D	C	A	B	A	B	A	A
8	A	B	B	D	B	A	D	C
9	B	D	A	C	C	A	C	D
10	D	B	A	D	D	D	B	B
11	B	B	C	A	B	A	C	A
12	C	B	B	A	A	B	B	C
13	C	A	A	D	B	D	D	D
14	C	A	B	B	A	D	C	C
15	D	C	D	D	C	C	B	B
16	A	A	C	D	B	C	C	B
17	A	C	C	B	D	B	C	C
18	A	C	D	A	C	A	A	D
19	B	B	D	C	A	D	A	A
20	A	B	A	B	D	C	C	B
21	D	D	C	B	B	A	D	A
22	C	A	A	D	C	C	C	A
23	B	C	D	B	C	C	B	D
24	D	B	B	B	B	B	B	C
25	C	C	B	A	A	D	B	D
26	C	A	D	C	A	C	D	A
27	A	C	C	A	C	C	B	D
28	B	C	A	B	B	A	B	C
29	B	D	C	A	B	C	D	A
30	A	B	C	C	B	C	A	C

(Please turn over)

M | 2012 Mathematics Answer Keys

ICAS
International Competitions and Assessments for Schools

Question Number	Paper A	Paper B	Paper C	Paper D	Paper E	Paper F	Papers G & H	Papers I & J
31	C	C	C	A	C	B	D	D
32	C	D	D	A	C	D	B	D
33	A	C	A	C	C	B	D	D
34	A	B	A	B	A	D	A	C
35	B	C	D	D	A	D	D	A
36	C	D	D	72|072	5|05|005|0 5	16|016	4|04|004|0 4	26|026
37	D	A	B	10|010	600	566	3|03|003|0 3	9|09|009|0 9
38	D	A	C	90|090	32|032	27|027	4|04|004|0 4	39|039
39	C	C	C	5|05|005|0 5	9|09|009|0 9	137	9|09|009|0 9	75|075
40	D	B	B	500	900	6|06|006|0 6	127	126

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