acara AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY

NATIONAL ASSESSMENT PROGRAM
LITERACY AND NUMERACY

YEAR
9
2011

NUMERACY
CALCULATOR ALLOWED

SESSION 1

0:40

Time available for students to complete test: 40 minutes

Use 2B or HB pencil **only**

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Do not write on this page.

PRACTICE QUESTIONS

P1

50, 100, 150, 200, 250, **?**

Shade one bubble.

Which number comes next in this sequence?

251	260	300	350
⬭	⬭	⬭	⬭

P2

Dave had $5.75.
He spent $1 and then spent 75 cents.

How much money does he have left?

Write your answer in the box.

$ ☐

P3

268 cents equals

☐ dollars and ☐ cents.

Write your answers in the boxes.

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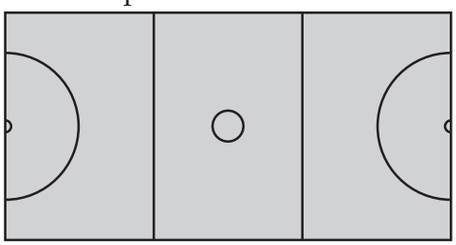
YEAR 9 **NUMERACY (CALCULATOR ALLOWED)**

Shade one bubble.

1 Some shapes are shown on this netball court.



Which shape is **not** shown?

semicircle ○ circle ○ square ○ rectangle ○

2 The picture shows a set of lights. Two of the lights are off.

What fraction of the set of lights is off?

$\frac{1}{2}$ ○ $\frac{1}{7}$ ○ $\frac{2}{7}$ ○ $\frac{2}{9}$ ○

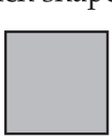
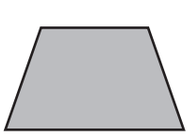
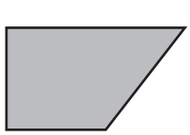
3 What number makes this number sentence correct?

$1.6 \times ? = 4.48$

2.8 ○ 2.88 ○ 6.08 ○ 7.168 ○

4 Only one of these shapes has two acute angles and two obtuse angles.

Which shape is it?

 ○  ○  ○ ○

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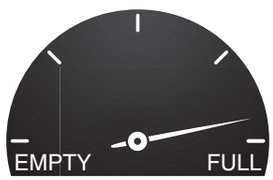
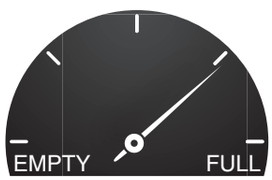
5 These pictures show the dials for four fuel tanks.

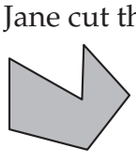
Which dial shows that the tank is about 75% full?

Shade one bubble.





6 Jane cut this shape out of card.



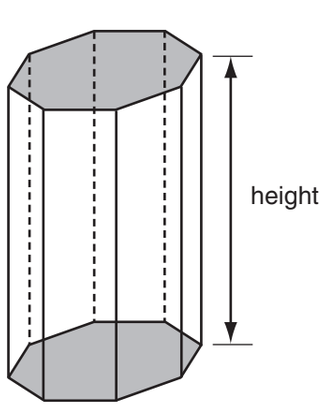
She flipped the shape over.

Which of these could the shape look like after Jane flipped it over?

7 For any prism the surface area (S) is calculated by multiplying the perimeter of its base (p) by its height (h) and adding twice the area of the base (A).

Which one of these formulas could be used for this calculation?

- $S = 2phA$
- $S = ph + A$
- $S = ph + 2A$
- $S = 2ph + 2A$



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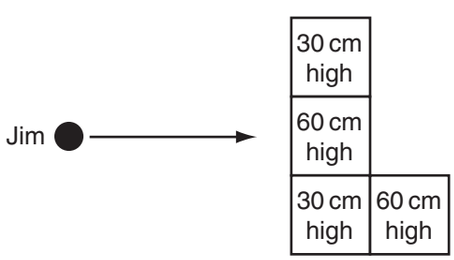
8 When Eli moved to Australia, the population was 22 112 277 people.

Shade one bubble.

How many people is that to the nearest million?

- ⬭ 20 000 000
- ⬭ 22 000 000
- ⬭ 22 100 000
- ⬭ 22 110 000

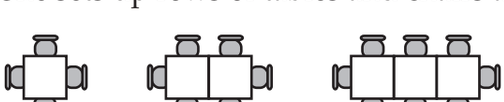
9 Jim builds 4 garden beds arranged in an L-shape.
Jim and his garden beds are shown on the plan below.



Which view of the beds would Jim see?

⬭ ⬭ ⬭ ⬭

10 Miriam owns a restaurant.
She sets up rows of tables and chairs as shown.



4 6 8

Which of these rules can be used to work out how many chairs will be needed on any row of tables?

- ⬭ *number of tables* × 4
- ⬭ *number of tables* ÷ 2 – 2
- ⬭ *number of tables* × 2 + 2
- ⬭ *number of tables* × 2 – 2

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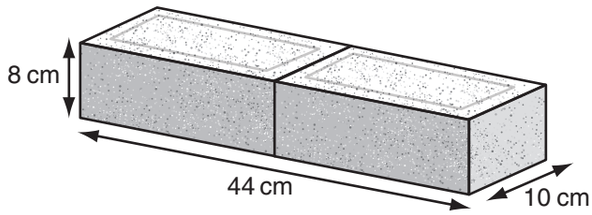
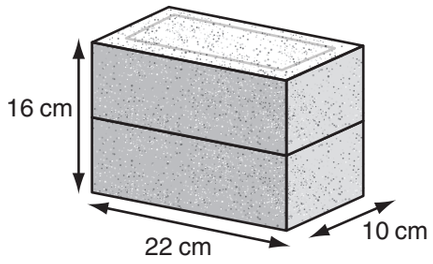
11 Two bricks can be placed together face-to-face to form three different rectangular prisms. Two of them are shown here.

Shade one bubble.





What would be the measurements of the third prism?

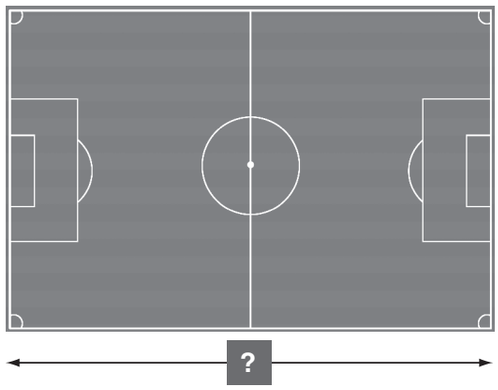
- ⬭ 11 cm by 16 cm by 10 cm
- ⬭ 22 cm by 20 cm by 8 cm
- ⬭ 32 cm by 22 cm by 10 cm
- ⬭ 44 cm by 16 cm by 5 cm

12 Peter wants to paint his bedroom walls.

What information will best help him decide how much paint to buy?

- ⬭ volume of room
- ⬭ capacity of room
- ⬭ perimeter of all walls
- ⬭ area of all walls

13 The length of Robin's soccer field is 125 m. Robin is making a scale model of the field using a ratio of 1 : 500.



How long should Robin make the model soccer field?

4 cm	25 cm	40 cm	250 cm
⬭	⬭	⬭	⬭

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14 The value of y is given by the rule $y = 4 - x^2$.

What is the value of y when $x = 1.5$?

Shade one bubble.

1	1.75	2.5	6.25
⬭	⬭	⬭	⬭

15

Internet use in Australia				
Year	2003	2004	2005	2006
Number of people (millions)	12.21	13.27	13.60	14.28

Between 2003 and 2006, internet use in Australia increased by about

- ⬭ 0.5 million people.
- ⬭ 1 million people.
- ⬭ 2 million people.
- ⬭ 2.5 million people.

16 Dustin collects football cards.
He sells some of his cards. The prices are listed here.

$3, $5, $5, $8, $8, $10, $10, $10, $40

What is their mean (average) price?

$8	$9	$10	$11
⬭	⬭	⬭	⬭

17 This label was on the side of a bottle of juice.

	Per bottle	Per 100 mL
Energy	648 kJ	182 kJ

What was the size of the bottle of juice to the nearest mL?

1179 mL	830 mL	466 mL	356 mL
⬭	⬭	⬭	⬭

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18 When this kettle is full of water it has a mass of 2900 grams.

Write your answer in the box.

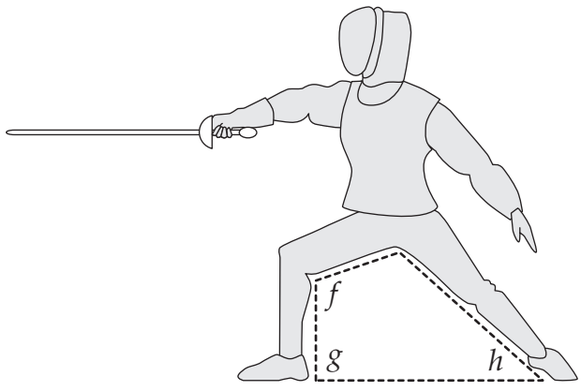
When the kettle is half full of water it has a mass of 2050 grams.

What is the mass of the kettle when it is empty?

_____ grams

19 This picture shows a position used in the sport of fencing.

Shade one bubble.



Which list shows the three angles f, g, h in **increasing** order of size?

h, g, f	h, f, g	g, f, h	f, g, h
⬭	⬭	⬭	⬭

20 A bag contains 50 coloured marbles.

This table shows how many marbles of each colour are in the bag.

Colour	red	yellow	orange	green	blue
Number	10	5	20	5	10

One marble is picked at random from the bag.

What is the probability of the marble being red **or** yellow?

0.1	0.15	0.2	0.3
⬭	⬭	⬭	⬭

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21 Which of these percentages is closest in value to $\frac{7}{9}$?

Shade one bubble.

76% ⬭ 77% ⬭ 78% ⬭ 79% ⬭

22 The table shows the charges for hiring this boat.

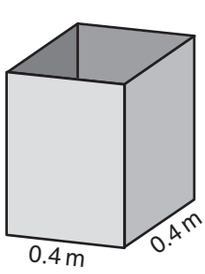
h (number of hours hired)	1	2	3	4	5
c (charge $)	25	45	65	85	105

Which rule shows the relationship between c and h?

$c = 20 + 5h$ ⬭ $c = 5 + 20h$ ⬭ $c = 25 + 20h$ ⬭ $c = 20 + 25h$ ⬭

23 A factory makes metal boxes. The base and sides of the boxes are rectangular. The height of each box is 0.8 metres.

Which box has a volume of 0.16 cubic metres?



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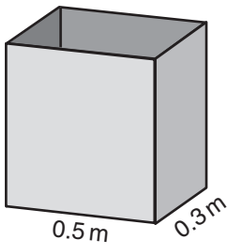

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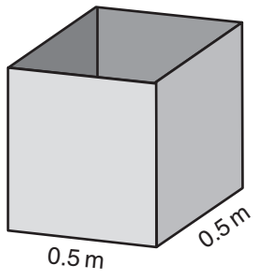

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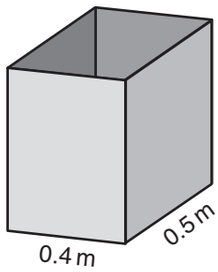
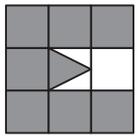


⬭

24 Tam cuts letters from squares of metal.

Which of these letters uses exactly $\frac{5}{6}$ of the metal square?



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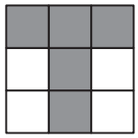
⬭



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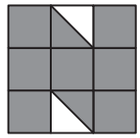

⬭

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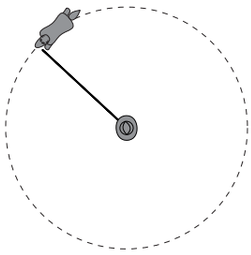
25 A horse trots in a circle at the end of a 4 metre rope.

Shade one bubble.



About how far has the horse trotted after completing 10 circles?

25 metres ○ 50 metres ○ 125 metres ○ 250 metres ○

26 A shop sells these four perfumes.

Argent
90 mL for $99

Bucci
150 mL for $160

Cutie
30 mL for $30

Davois
50 mL for $45

Which perfume has the **highest** price per mL?

Argent ○ Bucci ○ Cutie ○ Davois ○

27 Kyle draws a quadrilateral with a perimeter of 30 centimetres.

What is the maximum possible area of Kyle's shape?

Write your answer in the box.

_____ square centimetres

28 The table shows the height of a burning candle at different times.

Time (minutes)	0	5	10	15	20	25	30
Height (cm)	15	14.25	13.5	12.75	12	11.25	10.5

The candle burns until its height is 3 cm.

How many minutes does it take the candle to burn to a height of 3 cm?

_____ minutes

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29 Amanda sells T-shirts at a market for $15 each.
Her costs are $6 per T-shirt and $540 per month rent.

Write your answer in the box.

How many T-shirts must Amanda sell per month to equal her monthly costs?

30 A builder needs 6.5 cubic metres of concrete for a job.
This table shows the mixture for the concrete.

cement	sand	small stones	water
2 parts	4 parts	6 parts	1 part

How many cubic metres of sand does the builder need?

cubic metres

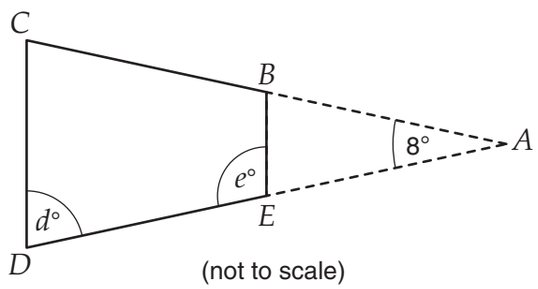
31 A rectangular sheet of paper had a width of 841 millimetres.
Its area was 1 square metre.

What was its length to the nearest millimetre?

millimetres

32 In this drawing, ACD is an isosceles triangle and $BC = DE$.

Write your answers in the boxes.



(not to scale)

What are the sizes of the two marked angles, d and e?

$d =$ ° $e =$ °

STOP – END OF TEST

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Do not turn this page.

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