MINISTERIAL COUNCIL ON EDUCATION,
EMPLOYMENT, TRAINING AND YOUTH AFFAIRS

NATIONAL ASSESSMENT PROGRAM
LITERACY AND NUMERACY

NUMERACY
CALCULATOR ALLOWED

YEAR
9

2008

SESSION 2
Time available for students to complete
test: 40 minutes

Use 2B or HB
pencil **only**

1 At 6 am the temperature in Greenville was 11.9°C.
At midday it was 9.8°C warmer.
At 6 pm it was 10.9°C cooler than at midday.

What was the temperature at 6 pm?

Shade one
bubble.

8.8°C	10.8°C	13.0°C	32.6°C
○	○	○	○

2 If $w = 6$, what is the value of $2w$?

12	26	36	62
○	○	○	○

3 A shop sells new and used computers.
The graph shows the price of 2 similar computers and their age in years.


Cost of computers
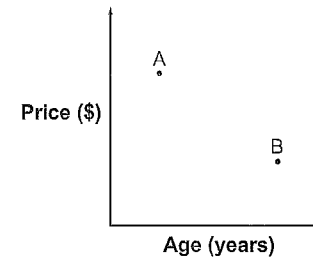
Which one of these statements is true?

○ Computer B is older and less expensive than computer A.
○ Computer A is newer and less expensive than computer B.
○ Computer A is older and more expensive than computer B.
○ Computer B is newer and more expensive than computer A.

4 This table summarises the time Mick spent walking his dog over five days.

Shade one bubble.
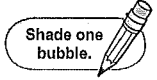
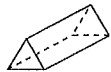| TIME SPENT WALKING THE DOG	
Day	Time
Monday	45 minutes
Tuesday	50 minutes
Wednesday	1 hour
Thursday	62 minutes
Friday	43 minutes

What was the average (mean) time for these walks?

40 minutes   52 minutes   65 minutes   260 minutes

○   ○   ○   ○

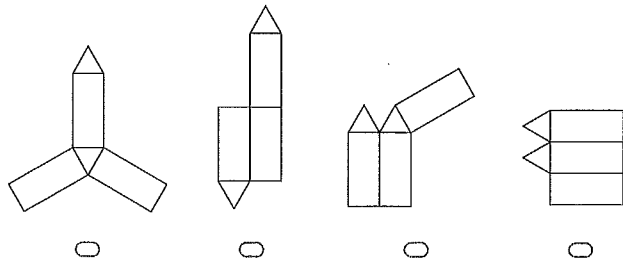**5** Which number is exactly halfway between $1\frac{1}{4}$ and $3\frac{3}{4}$?

$1\frac{1}{2}$ 2 $2\frac{1}{2}$ $2\frac{3}{4}$
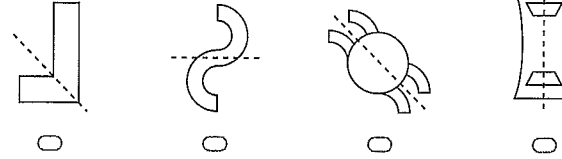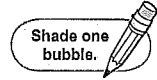
○   ○   ○   ○

6 This is a triangular prism.

Which diagram is the net of a triangular prism?
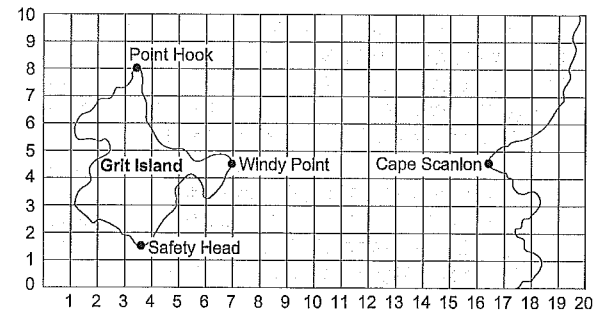
○   ○   ○   ○

7 Which dotted line is a line of symmetry?

Shade one bubble.

○   ○   ○   ○

8 If $x = 3$, what is the value of $\dfrac{4x}{2x-2}$?

2   3   4   12

○   ○   ○   ○

9 There were only 14 students in Rina's class on Wednesday. The other 11 were absent.

What percentage of Rina's class was absent?

11%   44%   55%   56%

○   ○   ○   ○

10 Here is a map of Grit Island.
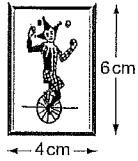
Which one of these points is on Grit Island?

$(6, 2\frac{1}{2})$ $(1, 6\frac{1}{2})$ $(4\frac{1}{2}, 1)$ $(3\frac{1}{2}, 5)$

○   ○   ○   ○

11 Lyn uses a photocopier to enlarge this picture.

Shade one bubble.

6 cm

4 cm

The enlarged picture is 3 times as long and 3 times as wide as the original.

The area of the enlarged picture is

○ 3 times the area of the original.
○ 6 times the area of the original.
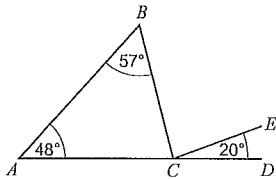○ 9 times the area of the original.
○ 24 times the area of the original.

12 Here is a table of values for x and y.

x	0	0.5	1	1.5	2
y	0	0.5	2	4.5	8

Which of these is a correct rule for y in terms of x?

$y = x$ $y = 2x$ $y = 3x$ $y = 2x^2$
○   ○   ○   ○

13 In the diagram, ACD is a straight line.

B

57°

Not to scale

E

48°   20°

A   C   D

What is the size of angle BCE?

20°   48°   75°   85°
○   ○   ○   ○

14 Mira made this table showing population data over two years for the six Australian states.

Some data for South Australia is not shown.

Shade one bubble.

Population of Australian States			
	2002 Population	2003 Population	Percentage increase from previous year
NSW	6 662 212	6 716 277	0.8%
VIC	4 884 952	4 947 985	1.3%
QLD	3 754 154	3 840 111	2.3%
SA	1 522 475	?	0.6%
WA	1 936 902	1 969 046	1.7%
TAS	474 305	479 958	1.2%

What was the population of South Australia (SA) closest to in 2003?

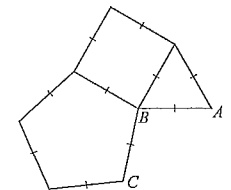2 537 500   2 436 000   1 613 800   1 531 600
○   ○   ○   ○

15 The diameter of a circular table top is 2.6 metres.

What is its circumference to the nearest metre?

4 m   5 m   8 m   16 m
○   ○   ○   ○

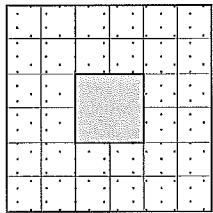**16** An equilateral triangle, a square and a regular pentagon meet at point B.

Not to scale

B   A

C

What is the size of the obtuse angle CBA?

102°   108°   112°   120°
○   ○   ○   ○

17 Here is a plan of Jim's backyard.

KEY
- ☐ Paving
- ☐ Garden

The area of the square garden in the middle is 16 m².

What is the area of the paving in Jim's backyard?

20 m²	32 m²	128 m²	144 m²
○	○	○	○

18 A rule for y in terms of x is $y = 6 - 4x$.

When $x = 3.75$ the value of y is

−9	−1.75	7.5	9
○	○	○	○

19 How many hours and minutes are between 2:27 am and 2:16 pm on the same day?

- ○ 11 hours and 11 minutes
- ○ 11 hours and 49 minutes
- ○ 12 hours and 11 minutes
- ○ 12 hours and 49 minutes

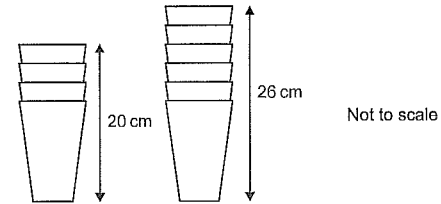**20** Which one of these is a right-angled isosceles triangle?

Not to scale

○   ○   ○   ○
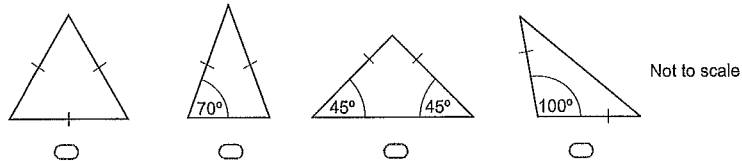
21 A stack of 4 cups is 20 cm tall.
A stack of 6 cups is 26 cm tall.

20 cm   26 cm   Not to scale

Which rule can be used to work out the height, in centimetres, of a stack of n cups?

$6n - 10$	$6n - 4$	$3n + 11$	$3n + 8$
○	○	○	○

22 Gina needs to travel by train for 22 days during May.
A daily ticket will cost her $6.60 and a monthly ticket will cost her $105.60.

What is her average **daily saving** if Gina buys a monthly ticket?

$1.80	$4.80	$39.60	$99.00
○	○	○	○

23 Kim uses this rule to work out the next number in a pattern.

Multiply by 7 and then add 1.

The first three numbers of his pattern are: **8, 57, 400, ...**

What is the **fifth** number in his pattern?

24 The amount of energy, E units, used by an air-conditioner for temperatures in the range 20°C to 30°C is given by the rule
$E = 2T^2$ where T is the temperature in °C.

How many units of energy are used when the temperature is 25°C?   units

25 Joe is 1.6 m tall. His shadow is 2 m long when he stands 3 m from the base of a floodlight.

Shade one bubble.

Not to scale

height

1.6 m

◄—2 m—►◄——3 m——►
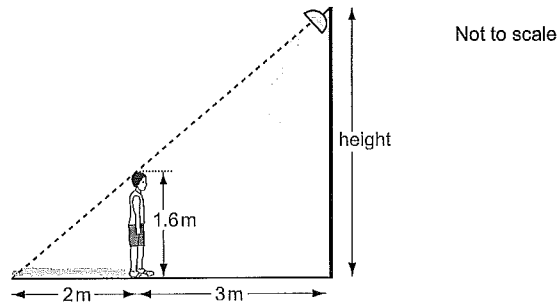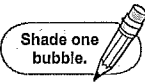
What is the height of the floodlight?

2.4 m   2.6 m   4.0 m   4.2 m
○   ○   ○   ○

26 This is a map of mountains in a national park.

Mt Burke
Mt Helen
Mt Flinders
LOOKOUT   Mt Blanc
Mt Hope   Mt Green

N
W—┼—E
S

KEY
✳ Mountain (Mt)
● LOOKOUT
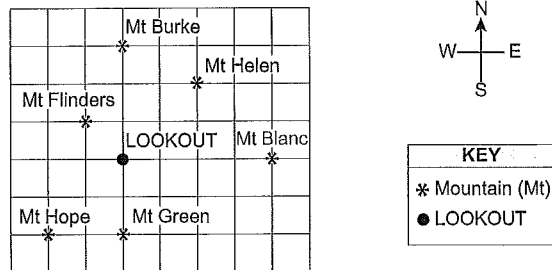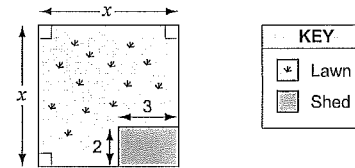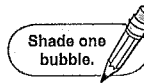
Anna is at the Lookout facing South. She turns 225° in a **clockwise** direction.

Which mountain is Anna now facing?

Mt Helen   Mt Blanc   Mt Flinders   Mt Hope
○   ○   ○   ○

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9

27 Sue drew this plan of a square block of land. All measurements are given in metres.

Shade one bubble.

◄—x—►

x

3

2

KEY
✳ Lawn
▨ Shed

The area of the lawn in square metres is

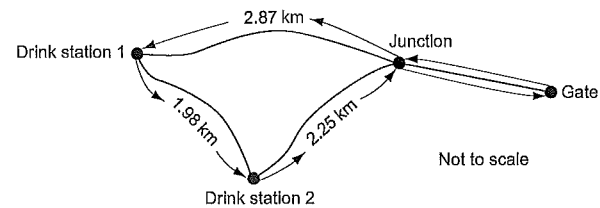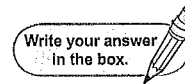$x^2 - 6$ $x^2 + 6$ $2x^2 - 5$ $2x^2 - 6$
○   ○   ○   ○

28 There are 420 girls and boys at a concert. The ratio of girls to boys at the concert is 3 to 7.

How many girls are at the concert?

126   140   180   294
○   ○   ○   ○

**29** This is a diagram of the course for a 10 km road race. The runners start and finish at the Gate.

Write your answer in the box.

2.87 km
Drink station 1   Junction
                                        Gate
1.98 km   2.25 km
Drink station 2

Not to scale

What is the distance between the Gate and the Junction? [   ] km

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10

30 This solid triangular prism needs all its faces painted.
The area of each triangular face is 3 m².

Write your answer in the box.

2.5m

Not to scale

2.5m

5m

3m
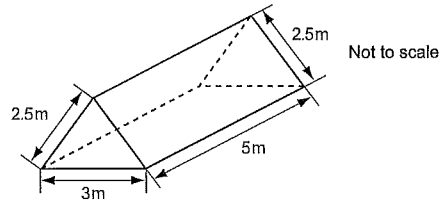
What is the **total** area to be painted? ☐ m²

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31 The cost in dollars to print *n* books is 500 + 10*n*.

How many books are printed for a cost of $15 000? ☐ books

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32 This list shows the number of films that nine members of a film club watched in April.

Shade one bubble.

Number of films watched	0, 1, 2, 2, 3, 4, 5, 5, 5

Which of the following is true for this data?

○ mean > median = mode
○ mean < median < mode
○ mean = median = mode
○ mean = median < mode

END OF TEST

P1 How many dolphins are shown on this card?

Shade one bubble.

3   4   5   6
○   ○   ○   ○
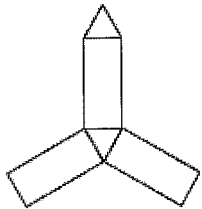

P2 6 + 4 = ☐

Write your answer in the box.

P3 What is the total cost of these two stamps?
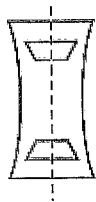
$1.50 $2.00

$ ☐

NAPLAN Numeracy (with calculator) Year 9 2008
Quick Answers

1. 10.8°C

2. 12

3. Computer B is older and less expensive than computer A.

4. 52 minutes

5. $2\frac{1}{2}$

6.

7.

8. 3

9. 44%

10. $\left(3\frac{1}{2}, 5\right)$

11. 9 times the area of the original.

12. $y = 2x^2$

13. 85°

14. 1 531 600

15. 8 m

16. 102°

17. 128 m^2

18. −9

19. 11 hours and 49 minutes

20.

21. $3n + 8$

22. $1.80

23. 19 608

24. 1250 units

25. 4.0 m

26. Mt Helen

27. $x^2 - 6$

28. 126

29. 1.45 km

30. 46 m^2

31. 1450 books

32. mean = median < mode