

Student's Name \_\_\_\_\_

Class \_\_\_\_\_

Teacher's Name \_\_\_\_\_



**TRINITY GRAMMAR SCHOOL**  
**MATHEMATICS DEPARTMENT**



**YEAR 10 MATHEMATICS**

**ASSESSMENT TASK 2**

**27<sup>TH</sup> FEBRUARY, 2006**

**TIME ALLOWED: 60 MINUTES**

**ASSESSMENT WEIGHTING: 20%**

**Instructions:**

- i) Do not open this paper until instructed.
- ii) Write your name, class and your teacher's name at the top of the page.
- iii) Marks for each question are indicated on the paper.
- iv) In order to obtain full marks for any question, full working must be shown.

**MARKS**

Simultaneous Eqns/24	Vol, Surface Area/24	Trig, Consumer/12	Total/60

SIMULTANEOUS EQUATIONS.

Question 1.

4 Marks

Solve simultaneously:

$$y = 10 \quad \text{--- (1)}$$

$$3x + 2y = 41 \quad \text{--- (2)}$$

Question 2.

4 Marks

Solve simultaneously:

$$3x + y = 14$$

$$x - y = 6$$

Question 3.

5 Marks

Solve simultaneously:

$$3x + 2y = 4 \quad \times 2$$

$$2x + 5y = 21 \quad \times 3$$

**Question 4.**

Solve simultaneously:

$$y = 4 - 3x \quad \text{--- ①}$$

$$4x - y = 10 \quad \text{--- ②}$$

5 Marks

**Question 5.**

From the following information, form a pair of simultaneous equations, then solve the equations.

6 Marks

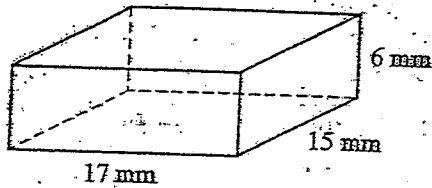
The cost of tickets for a stage show is \$50 for adults and \$30 for children. A total of 3500 people (adults and children) attended. The total from ticket sales was \$ 145 000. How many adults and how many children attended?

## VOLUME AND SURFACE AREA

### Question 6.

2 marks

Calculate the volume of the prism shown in cubic millimetres.  
Convert your answer into cubic centimetres.



### Question 7.

2 Marks

Calculate the volume of a cylinder of radius 10 cm, height 15 cm. Give your answer correct to 2 decimal places.

Question 8.

3 Marks

Calculate the volume of a square pyramid with base edge 22.4 cm, perpendicular height 60.6 cm. Give your answer correct to the nearest whole number.

Question 9.

2 Marks

A cube has a volume of 10 000 cubic centimetres. Calculate the length of its edge, answer correct to 2 decimal places.

Question 10.

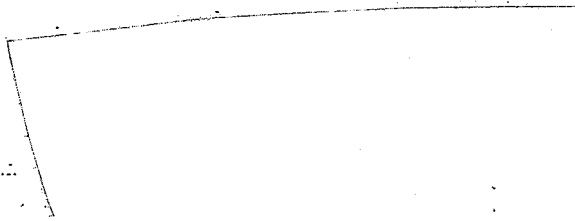
2 Marks

Calculate the volume of a hemisphere, radius 15 cm. Answer correct to 3 decimal places.

Question 11.

3 Marks

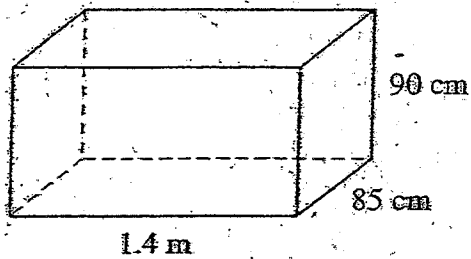
Calculate the surface area of a closed cylinder, radius 15 cm, length 60 cm. Answer correct to the nearest whole number



Question 12.

3 Marks

Calculate the surface area of the solid shown below. Give your answer in square metres, correct to 2 decimal places.

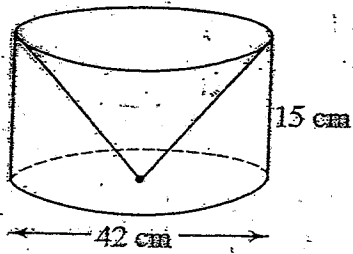


**Question 13.**

3 Marks

A cylinder has a cone cut out as shown.

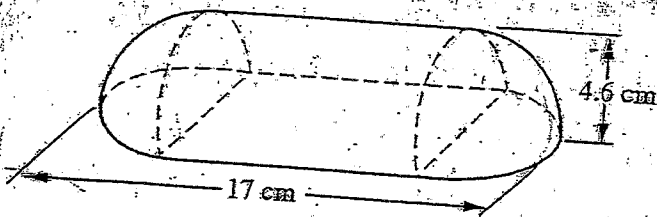
- a) What fraction of the volume of the cylinder remains?
- b) Calculate the remaining volume, correct to the nearest cubic centimetre.



**Question 14.**

4 Marks

Calculate the surface area of the solid shown below. Give your answer correct to the nearest whole number.



CONSUMER ARITHMETIC

Question 15.

3 Marks

David bought a new car and in the first year its value depreciated by 22%. If it was worth \$ 30 030 after 1 year, what was the price when new?

Question 16.

3 Marks

Calculate the simple interest on \$ 10 500 invested for 5 years at an interest rate of 5.8% per annum.

TRIGONOMETRY

Question 17.

3 Marks

A kite is on a string 80 metres long and is flying at an elevation of  $34^{\circ} 25'$ . Calculate its height above the ground. Answer to 1 decimal place. DRAW A SKETCH FIRST.



**Question 18.**

3 Marks

A yacht sails for 80 kilometres due north then 60 kilometres due west. Calculate its bearing from its starting point. Answer to nearest degree. DRAW A SKETCH FIRST.

END OF TEST

**ANSWERS TO TRINITY GRAMMAR SCHOOL**  
**YR 10 - 2006 FEB ASSESSMENT**

**SIMULTANEOUS EQUATIONS**

1	$x = 7, y = 10$	2	$x = 5, y = -1$	3	$x = -6, y = 11$	4	$x = 2, y = -2$	5	2000 adults, 1500 children
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**VOLUMES AND SURFACE AREA**

6	$1.53 \text{ cm}^3$	7	$4712.39 \text{ cm}^3$	8	$10136 \text{ cm}^3$	9	$21.54 \text{ cm}$	10	$7068.583 \text{ cm}^3$
11	$7069 \text{ cm}^3$	12	$6.43 \text{ m}^2$	13 a	$\frac{2}{3}$	b	$1385 \text{ cm}^3$	14	$384 \text{ cm}^2$

**CONSUMER ARITHMETIC**

15	\$38 500	16	\$3045
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**TRIGONOMETRY**

17	45.2 m	18	$323^{\circ}\text{T}$
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