

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:

$$\begin{aligned} y &= 10 && \text{--- (1)} \\ 3x + 2y &= 41 && \text{--- (2)} \end{aligned}$$

Question 2.

4 Marks

Solve simultaneously:

$$\begin{aligned} 3x + y &= 14 \\ x - y &= 6 \end{aligned}$$

Question 3.

5 Marks

Solve simultaneously:

$$\begin{aligned} 3x + 2y &= 4 && \times 2 \\ 2x + 5y &= 21 && \times 3 \end{aligned}$$

**Question 4.**

5 Marks

Solve simultaneously:

$$y = 4 - 3x \quad \text{--- (1)}$$

$$4x - y = 10 \quad \text{--- (2)}$$

**Question 5.**

6 Marks

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

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?

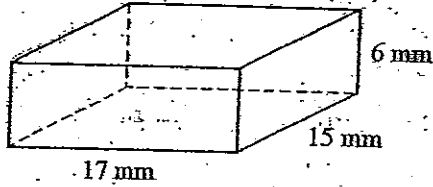
VOLUME AND SURFACE AREA

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.

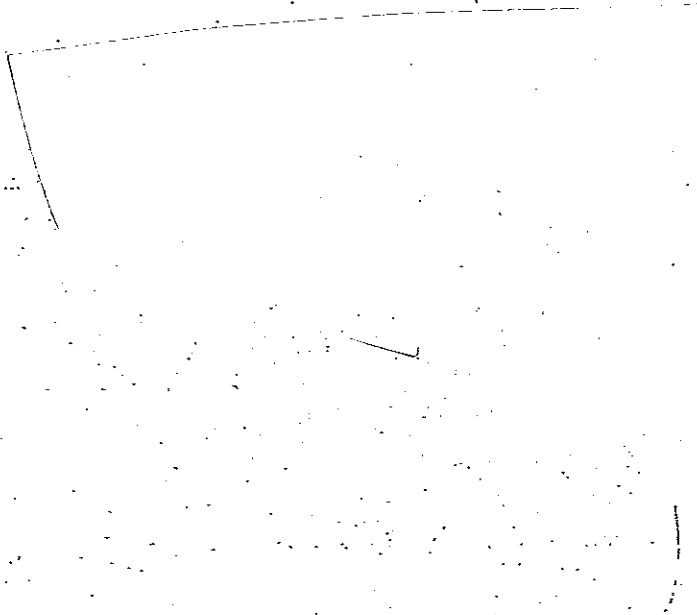
2 Marks

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

Question 11.

3 Marks

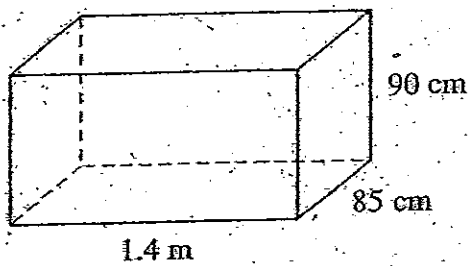
Calculate the surface area of a closed cylinder, radius 15 cm, length 60 cm. Answer correct to the nearest whole number



Question 12.

3 Marks

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

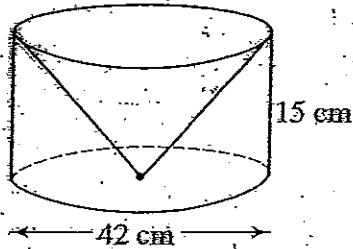


**Question 13.**

3 Marks

A cylinder has a cone cut out as shown.

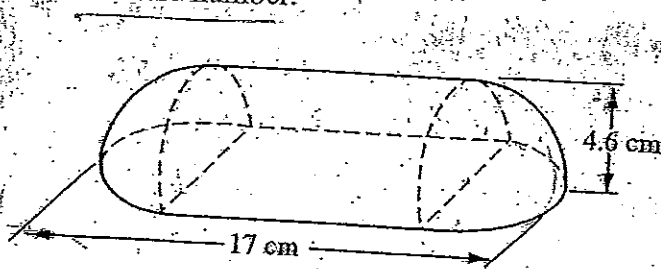
- a) What fraction of the volume of the cylinder remains?
- b) Calculate the remaining volume, correct to the nearest cubic centimetre.



**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**

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

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

**CONSUMER ARITHMETIC**

<b>15</b>	\$38 500	<b>16</b>	\$3045
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**TRIGONOMETRY**

<b>17</b>	$45.2 \text{ m}$	<b>18</b>	$323^{\circ}\text{T}$
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