S5/6 National 5 Homework 13 – Questions from Past Papers

1

Find the gradient of the straight line joining points A(3, -7) and B(-5, 3) 2

2

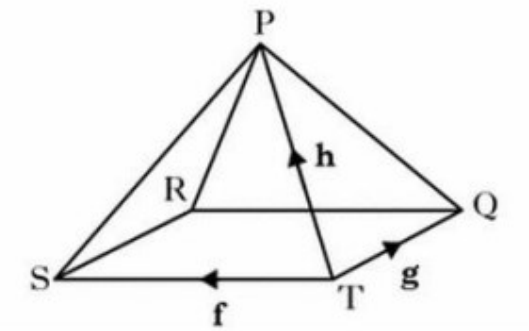
Marmalade is on special offer.
Each jar on special offer contains 12.5% more than the standard jar.

A jar on special offer contains 450 g of marmalade.

How much does the standard jar contain? 3

3

The diagram shows a square based pyramid PQRST.



Express $\overrightarrow{RP}$ in terms of $\boldsymbol{f}, \boldsymbol{g}$ and $\boldsymbol{h}$. 3

4

Write $\frac{3}{m} + \frac{4}{(m+1)}$ as a single fraction in its simplest form. 3

5

Evaluate $2^0 + 3^{-1}$. 2

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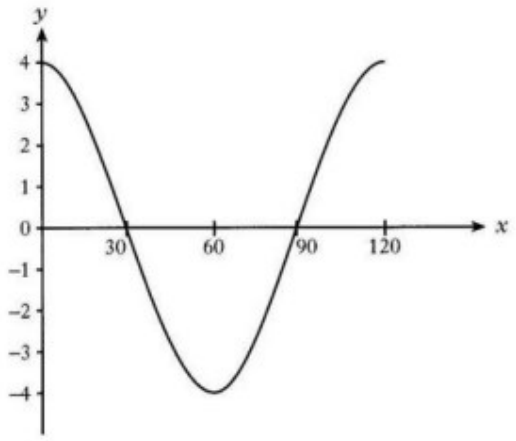
6

Part of the graph of $y = a\cos bx°$ is shown in the diagram.



State the values of a and b. 2

7

Express $\sqrt{12} + 5\sqrt{3} - \sqrt{27}$ as a surd in its simplest form. 3

8

The average Scottish house price is £153 100.
The average price is expected to rise by 2.5% per month.

What will the average Scottish house price be in 3 months?

Give your answer correct to three significant figures. 3

9

A sports centre charges different entrance fees for adults and children.

(a) One evening 14 adults and 4 children visited the sports centre.
The total collected in entrance fees was £55.00.

Let x pounds be the adult entrance fee and y pounds be the child's entrance fee.

Write down an equation in x and y to describe the above information. 1

(b) The following evening 13 adults and 6 children visited the sports centre.
The total collected in entrance fees was £54.50.

Write down a second equation in x and y. 1

(c) Calculate the entrance fee for an adult and the entrance fee for a child. 4

10

Solve algebraically the equation

$$4\sin x° + 1 = -2 \qquad 0 \leq x < 360.$$ 3