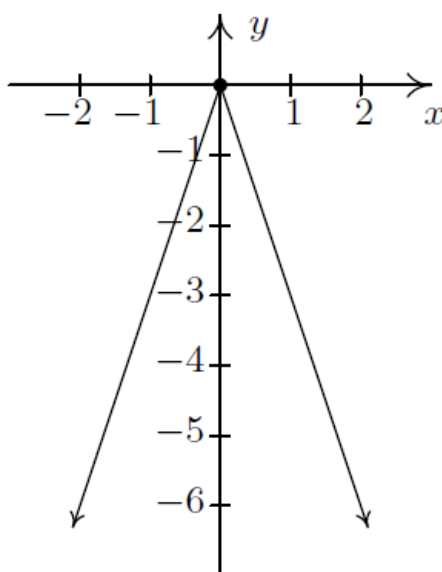


**INTERNATIONAL FOUNDATION CERTIFICATE****MATHEMATICS****SAMPLE EXAMINATION PAPER**

- a) Time allowed: Three hours
b) Attempt FIVE questions only
c) All questions carry equal marks.

1. Answer the following questions

- a. What is 38 minutes as a fraction of one hour?
b. Present $10/30$ as a decimal
c. John achieved a score of 42 out of 70 in his Maths test. What percentage mark did he achieve?
d. What is 35% as a decimal
e. The body weights of three friends were 52 kilos, 84 kilos and 73 kilos. What is the average weight?
f. What decimal is the same as $4/20$
g. What is 31% as a fraction?

2. Given the graph of the function $f(x) = -3|x|$ 



- a. Find the domain and range of $f(x)$.
- b. Find the zero of $f(x)$.
- c. Find the relative maximum of $f(x)$.
- d. Find the relative minimum of $f(x)$.
- e. Identify the intervals on which $f(x)$ is decreasing and increasing.

3. Provide solutions to the following:

a.
$$\begin{cases} 4x - 2y = 2 \\ x - y = 1 \end{cases}$$

b.
$$\begin{cases} 2x + y = 10 \\ x^2 + y = 13 \end{cases}$$

c.
$$\begin{cases} 4x - 2y = 4 \\ 16x - 8y = 2 \end{cases}$$

d.
$$\begin{cases} 2x + 2y = 2 \\ -4x - 4y = -4 \end{cases}$$

4. Answer the following questions:

The price of a particular television brand has increased by 15%. The new price is £259

a) What was the old price?

b) If the direct competitor was 25% more expensive than the old price what is the price difference now?

c) If the costs of producing, distributing and selling the televisions represent 52% of the new selling price what is the profit per unit?



d) How many units would they need to sell in order to reach the company profit target of £750,000 per year?

5. Solve In R:

a) $-2x + 4 = 8x + 14$

b) $(x - 2)^2 - 1 = 0$

c) $2x - 4 > 2x + 8$

d) $5 < 3x - 13$

e) $2x^2 - 3x + 1 = 0$

6. Solve the following Equations:

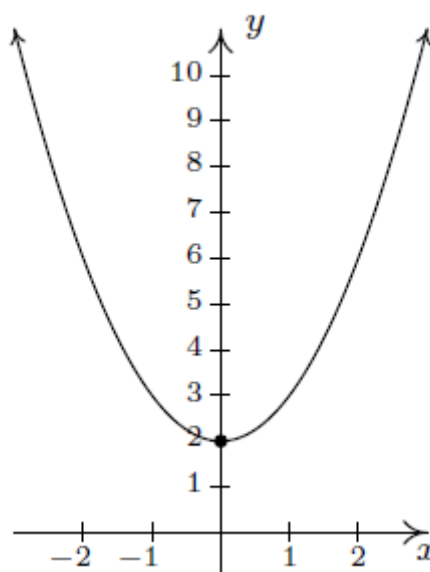
a) $2^x = 3$

b) $5 = 2^x$

c) $\log_2 x = 4$

d) $\log_3 81 = x$

e) $\log_5 27 =$

7. Use the quadratic equation $f(x) = x^2 + 2$ a) Find the vertex I of $f(x)$ b) Find the x- and y-intercepts of $f(x)$ c) Plot the graph of $f(x)$ 



- d) Find the interval A_1 , where $f(x)$ is increasing, and A_2 where $f(x)$ is decreasing.