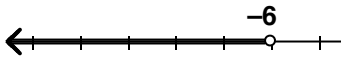
NAME:_____ **DATE: 08/29/14**

ASSIGNMENT: Paper 1 Preview

1.) Express in interval and set builder notation. [*2 marks*]



_____ _____

Set builder **Interval**

2.) Calculate f(–2) for $f(x) = 5x - |-14 - 6x|$ [*1 mark*]

3.) For functions f(x) = 2x – 3 and g(x) = x² + 2x – 6, find g(f(x)). [*1 mark*]

f(–2) = _____ **g(f(x)) =** _____

4.) For the expression $\frac{a}{bc}$ **(where** $a,b,c \neq 0$**), complete the following** [*2 marks*]

a. What is the additive inverse of ? $\frac{a}{bc}$ _____

b. What is the multiplicative inverse of ? $\frac{a}{bc}$ _____

5.) Give an example of each of the following. [*3 marks*]

_____ a positive real number that is not a natural number

_____ a rational number that is not a natural number

_____ a negative irrational number

NAME:_____ **DATE: 08/29/14**

6.) The function h(x) = $\frac{2x}{3}$ – 5 is vertically stretched by a factor of 3 and then reflected about the y-axis. What is the new function, h'(x)?

h'(x) = _____

7.) What property is displayed below? [*2 marks*]

$x + \left(y \cdot \frac{1}{y} \right) = x + 1$ $\qquad$ $x \cdot (y + z) = (y + z) \cdot x$

_____ _____

8.) Rebecca calculates the linear regression for a set of data and sees the following on her calculator. [*2 marks*]

y = ax + b
a = –2.24532
b = 6.103

What is a possible value for r, the Pearson product moment correlation coefficient, given the information from her calculator? (circle the best answer)

A: 0.76 B: –2 C: –0.89 D: 0.09 E: –1.31 F: 1.8 G: 0.94

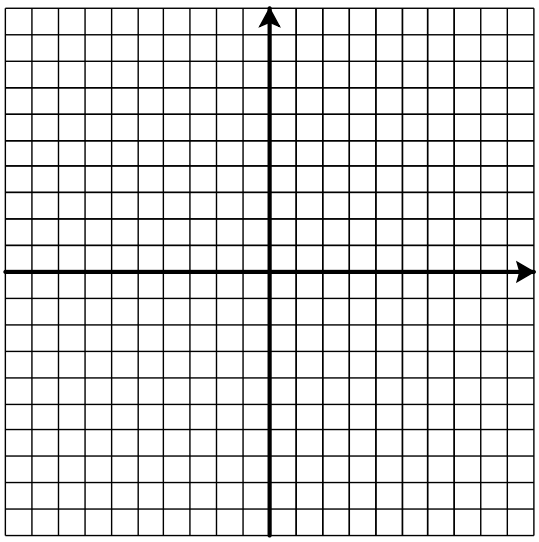
What led you to your response for this question? _____

_____

_____

NAME:_____ **DATE: 08/29/14**

Question 9 applies to a-g below.
[*7 marks*]



a.) Graph the following function -->

$f(x) = -|2x - 3| + 4$

b.) Calculate f(–2)

Answer: _____

c.) Calculate f(x) = 3

Answer: _____ , _____

d.) What is the most likely parent function for this graph?

A: rational B: linear C: quadratic D: radical E: absolute value

e.) What is the most likely equation for the parent function?

A: $f(x) = x$ B: $f(x) = |x|$ C: $f(x) = 1/x$ D: $f(x) = x^2$ E: $f(x) = 2^x$

f.) What is the range of the function?

A: $(4 \leq y < \infty)$ B: $(-\infty \leq y < \infty)$ C: $(4 \leq y < -\infty)$ D: $(\infty \leq y < 4)$

E: $(-\infty < y \leq 4)$

g.) Why is the graph above an example of a function instead of a relation?

_____

_____

10.) The function $f(x) = -x + 1$ is translated four units to the left to create the new function f'(x). What is the new function? [*1 mark*]

f'(x) = _____

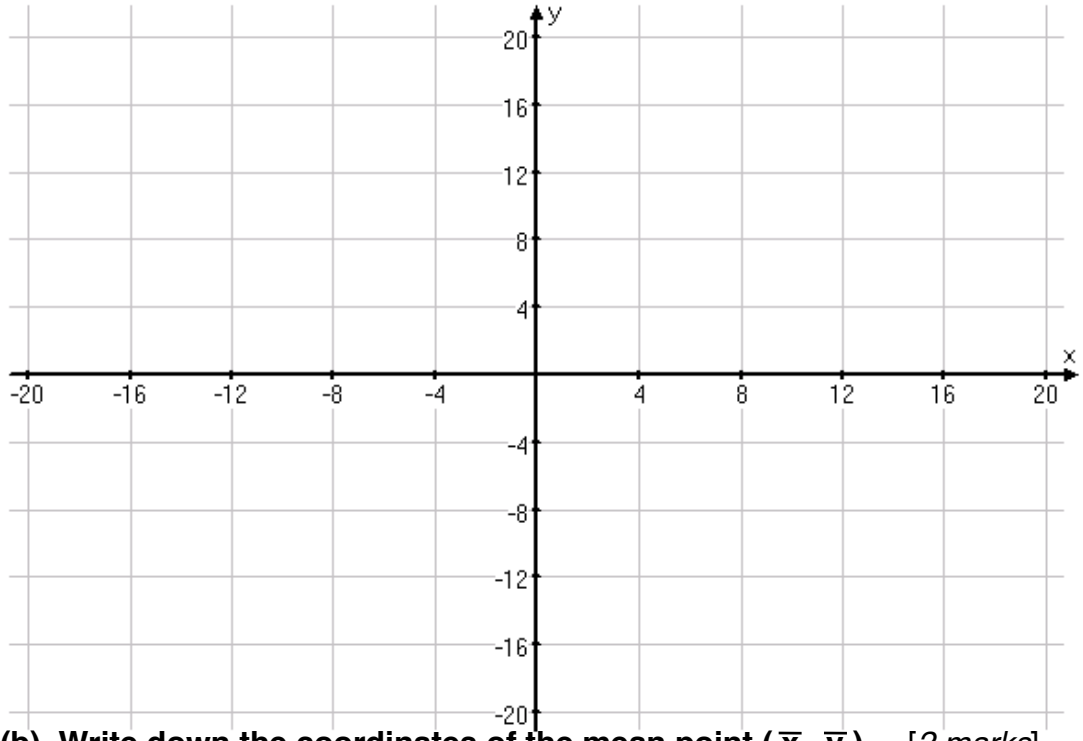
NAME:_____ **DATE: 08/29/14**

11.) The function h(x) = 4x – 1 is reflected about the x-axis and then horizontally compressed by a factor of ⅓ to create the new function h'(x). What is the new function? [*2 marks*]

h'(x) = _____

12.) (a) Plot the following data on the graph. [*2 marks*]

x	–13	8	5	19	–15	–10	–18	12
y	12	11	12	4	19	16	20	8



(b) Write down the coordinates of the mean point ($\overline{x}$, $\overline{y}$) [*2 marks*]

_____

(c) Estimate the value of r, the Pearson's product moment correlation coefficient for the data. [*2 marks*]

_____

(d) Draw an estimate for the regression line for y on x on the set of axes above. [*2 marks*]

_____

NAME:_____ **DATE: 08/29/14**

Limited answer key

I will only list the answers for problems which require handwritten calculations. This helps me verify you are competent in that particular skill. I will provide guidance on other answers in tutorials.

2.) –12

3.) $4x^2 – 8x – 3$

10.) $f'(x) = –x – 3$

11.) $h'(x) = –12x + 1$