1. **(1 point)** set106_CRA/badalgebra

Is the following statement true or false?

$$\frac{a}{a+b} = \frac{cancela}{cancela+b} = \frac{1}{b}$$

- A. True
- B. False

Answer(s) submitted:

-

(incorrect)

2. **(1 point)** set106_CRA/parallelperpendicular

Find the equation for the line passing through the point $(-2,-1)$ and parallel to the line whose equation is $2y-8=6x$.

$y =$ _____

Answer(s) submitted:

-

(incorrect)

3. **(1 point)** set106_CRA/addingalgebraicfractions

Perform the indicated operations on the three expressions

$$x + \frac{4}{x^2-16} - \frac{x^2}{x+4}.$$

Express your answer in simplest form $\frac{A}{B}$.

Answer: $A =$ _____ and $B =$ _____

Answer(s) submitted:

-
-

(incorrect)

4. **(1 point)** set106_CRA/exponents

The expression $\left(\frac{x^5y^5z^5x^{-3}}{x^2y^2z^5y^3}\right)^{-4}$ equals $x^ry^sz^t$

where r, the exponent of x, is: _____

and s, the exponent of y, is: _____

and finally t, the exponent of z, is: _____

Note: Your answers should be numbers.

Answer(s) submitted:

-
-
-

(incorrect)

5. **(1 point)** set106_CRA/inequality

The interval described in set notation by the inequality $|3x+9| < 30$ has interval notation:

_____

Answer(s) submitted:

-

(incorrect)

6. **(1 point)** set106_CRA/polynomial

Given that $f(x)$ is a degree 3 polynomial with zeros at -6, 3 and 5, find an equation for $f(x)$ given that the coefficient of x^3 equals 6.

$f(x) =$ _____

Note: You may insert your answer in factored form or standard form.

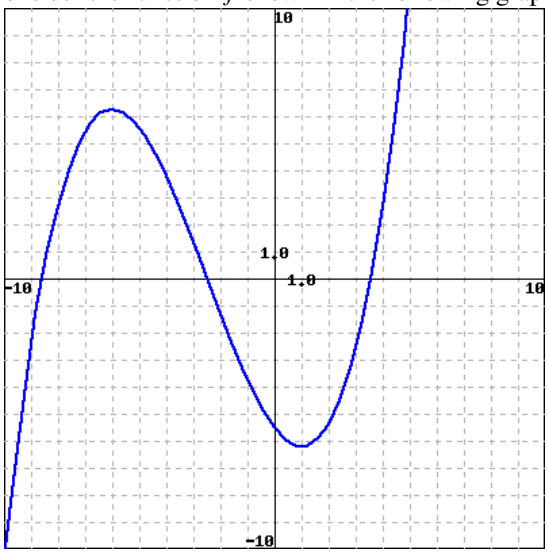
Answer(s) submitted:

-

(incorrect)

7. **(1 point)** set106_CRA/increasing

Consider the function f shown in the following graph.



(Click graph to enlarge)

Select **all answers** that are intervals on which f is increasing.

- A. $(-\infty,1)$
- B. $(1,\infty)$
- C. $(-6,\infty)$
- D. $(-\infty,0)\cup(3,\infty)$

- E. $(-\infty,-6)\cup(1,\infty)$
- F. $(-6,1)$
- G. $(-\infty,-6)$

Answer(s) submitted:

-

(incorrect)

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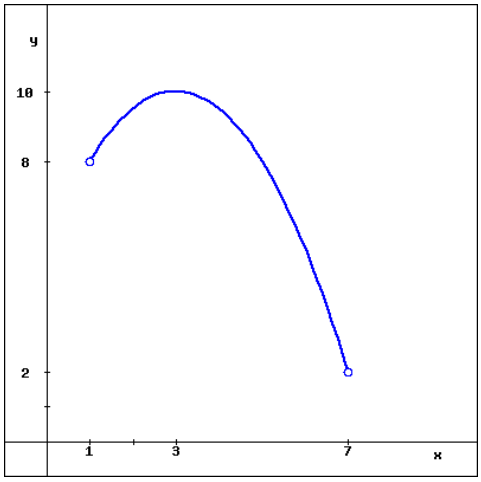
8. **(1 point)** set106_CRA/domainrange

Estimate the domain and range of the function $y=f(x)$ graphed in the figure. Assume the entire graph is shown.

(a) What is the domain of $f(x)$? _____ help (intervals)

(b) What is the range of $f(x)$? _____ help (intervals)



(Click graph to enlarge)

Answer(s) submitted:

-
-

(incorrect)

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9. **(1 point)** set106_CRA/piecewisecomposition

Let $f(x)$ and $g(x)$ be the piecewise defined functions given below.

$$f(x)=\begin{cases}x^2, & \text{if } x\le 0,\\ x^2+9, & \text{if } 0<x<4,\\ -9, & \text{if } x\ge 4.\end{cases}\qquad g(x)=\begin{cases}4x-10, & \text{if } x\le 0,\\ 9x^3, & \text{if } 0<x<10,\\ -10x+8, & \text{if } x\ge 10.\end{cases}$$

$f(g(-6))=$ _____

Answer(s) submitted:

-

(incorrect)

---

10. **(1 point)** set106_CRA/differencequotient

Let $f(x)=-x^2+5x+7$. When evaluated and simplified,

$$\frac{f(x+h)-f(x)}{h}=Ax+Bh+C,$$

where the constants

$A=$_____

$B=$_____

$C=$_____.

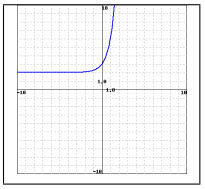
Answer(s) submitted:

-
-
-

(incorrect)

---

11. **(1 point)** set106_CRA/exponentialgraph



(Click graph to enlarge)

Which of the following could be an equation for the graph shown above?

- A. 4^x+3
- B. $\left(\frac{1}{4}\right)^x+2$
- C. 4^x+2
- D. $\left(\frac{1}{4}\right)^x+3$

Answer(s) submitted:

-

(incorrect)

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12. **(1 point)** set106_CRA/logrules

Using properties of logarithms,

$$5\log x-5\log(x^2+1)+4\log(x-1)=\log(A)$$

for some expression

$A=$ _____

Note! "log" is not part of your answer.

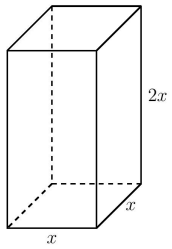
Answer(s) submitted:

-

(incorrect)

13. **(1 point)** `set106_CRA/geometryproblems`

The rectangular box shown below has a square base. Its surface area in terms of x is _____.



Answer(s) submitted:

-

(incorrect)

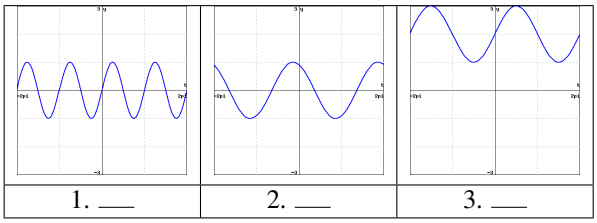
14. **(1 point)** `set106_CRA/triggraphs`

Match each of the equations below to one of the graphs by placing the corresponding letter of the equation under the appropriate graph.

A. $y = \sin(2t)$

B. $y = \sin(t+2)$

C. $y = \sin(t)+2$



1. ___	2. ___	3. ___

(Click an individual graph to enlarge)

Answer(s) submitted:

-
-
-

(incorrect)

15. **(1 point)** `set106_CRA/triangletrig`

Evaluate the following expression.

$\sin(\cos^{-1}(\frac{3}{5}))$ _____

Answer(s) submitted:

-

(incorrect)