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| Current Score: 0/47 | Due: Tue Oct 7 2014 11:59 PM PDT |
| Question | 1 2 3 4 5 6 7 8 9 10 11 12 13 |
| Points | 0/6 0/3 0/3 0/3 0/5 0/4 0/7 0/3 0/3 0/3 0/4 0/1 0/2 |
| | Total |
| | 0/47 |

1. 0/6 points

SCalcET7 2.3.001. [1633300]

Given that

$$\lim_{x \rightarrow 2} f(x) = 1 \quad \lim_{x \rightarrow 2} g(x) = -5 \quad \lim_{x \rightarrow 2} h(x) = 0,$$

find the limits, if they exist. (If an answer does not exist, enter DNE.)

(a) $\lim_{x \rightarrow 2} [f(x) + 5g(x)]$

(b) $\lim_{x \rightarrow 2} [g(x)]^3$

(c) $\lim_{x \rightarrow 2} \sqrt{f(x)}$

(d) $\lim_{x \rightarrow 2} \frac{5f(x)}{g(x)}$

(e) $\lim_{x \rightarrow 2} \frac{g(x)}{h(x)}$

(f) $\lim_{x \rightarrow 2} \frac{g(x)h(x)}{f(x)}$

2. 0/3 points

SCalcET7 2.3.007. [1633285]

Evaluate the limit using the appropriate Limit Law(s). (If an answer does not exist, enter DNE.)

$$\lim_{x \rightarrow 8} \left(2 + \sqrt[3]{x}\right) \left(2 - 5x^2 + x^3\right)$$

3. 0/3 points

SCalcET7 2.3.011. [1733446]

Evaluate the limit, if it exists. (If an answer does not exist, enter DNE.)

$$\lim_{x \rightarrow 3} \frac{x^2 - 4x + 3}{x - 3}$$

4. 0/3 points

SCalcET7 2.3.020. [1799958]

Evaluate the limit, if it exists. (If an answer does not exist, enter DNE.).

$$\lim_{t \rightarrow 4} \frac{t^4 - 256}{t^3 - 64}$$

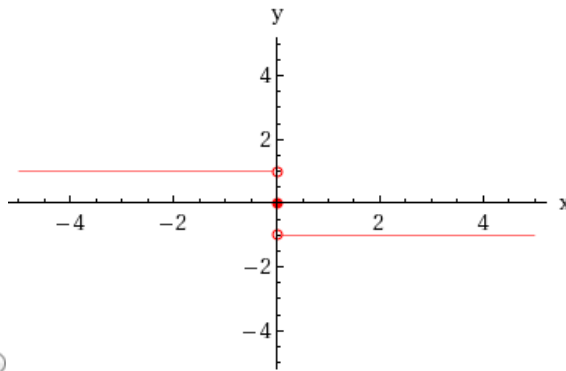
5. 0/5 points

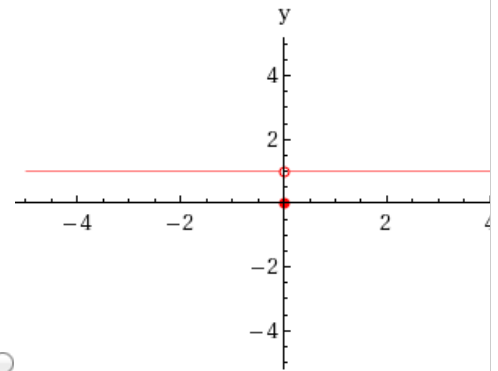
SCalcET7 2.3.047. [1634062]

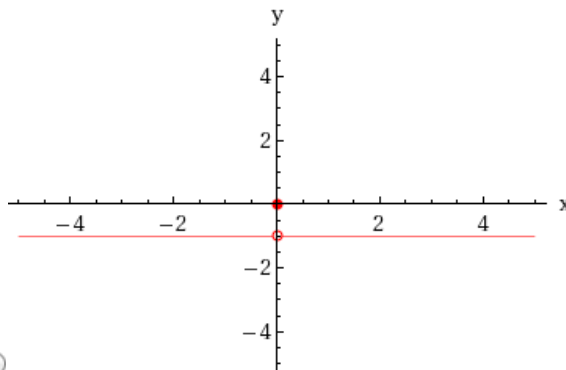
The *signum* (or sign) function, denoted by sgn , is defined by

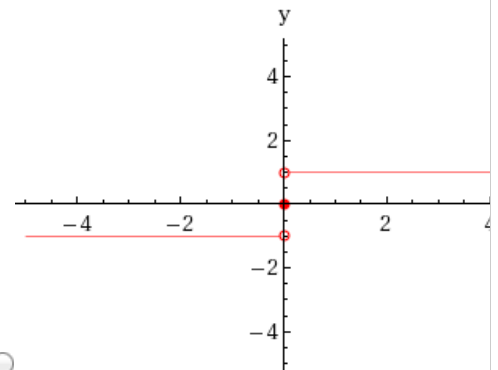
$$\text{sgn } x = \begin{cases} -1 & \text{if } x < 0 \\ 0 & \text{if } x = 0. \\ 1 & \text{if } x > 0 \end{cases}$$

(a) Sketch the graph of this function.









(b) Find each of the following limits. (If an answer does not exist, enter DNE.)

(i) $\lim_{x \rightarrow 0^+} \text{sgn } x$

(ii) $\lim_{x \rightarrow 0^-} \operatorname{sgn} x$

(iii) $\lim_{x \rightarrow 0} \operatorname{sgn} x$

(iv) $\lim_{x \rightarrow 0} |\operatorname{sgn} x|$

6. 0/4 points

SCalcET7 2.3.048. [1733416]

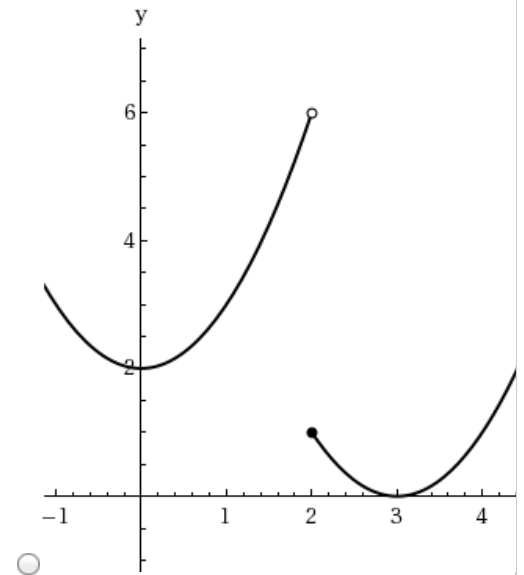
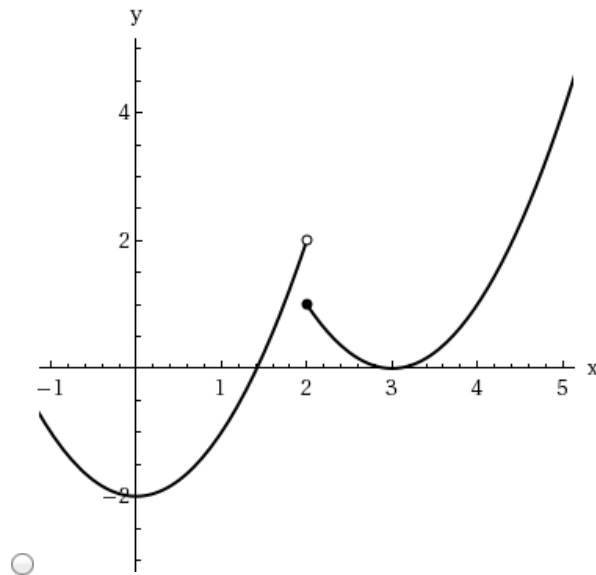
Let

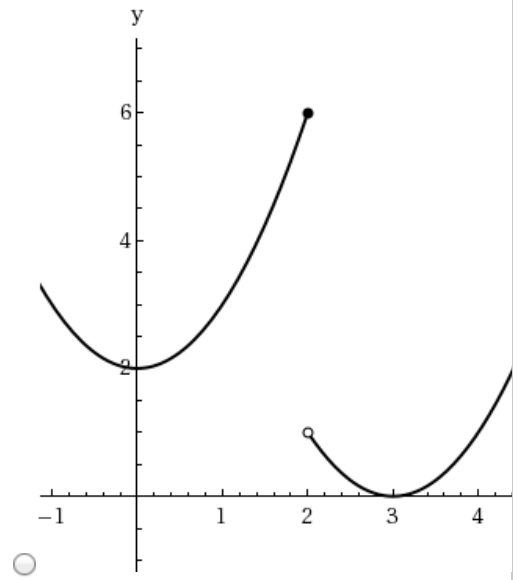
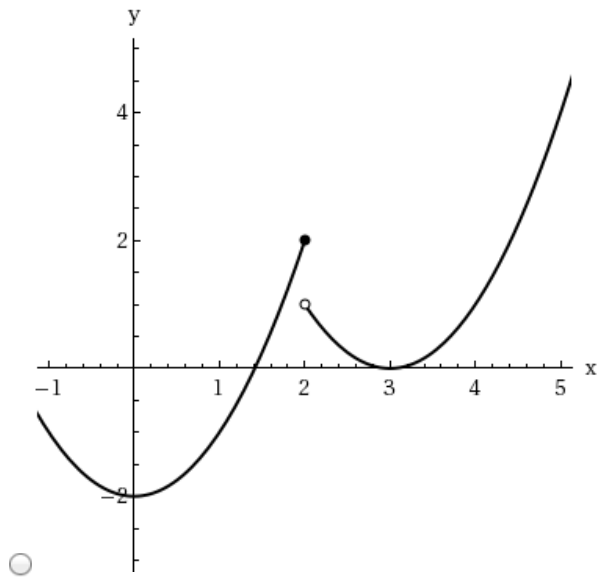
$$f(x) = \begin{cases} x^2 + 2 & \text{if } x < 2 \\ (x - 3)^2 & \text{if } x \geq 2 \end{cases}$$

(a) Find the following limits. (If an answer does not exist, enter DNE.)

$\lim_{x \rightarrow 2^-} f(x) =$

$\lim_{x \rightarrow 2^+} f(x) =$

(b) Does $\lim_{x \rightarrow 2} f(x)$ exist? Yes No(c) Sketch the graph of f .



7. 0/7 points

Let

$$g(x) = \begin{cases} x & \text{if } x < 1 \\ 2 & \text{if } x = 1 \\ 2 - x^2 & \text{if } 1 < x \leq 2 \\ x - 1 & \text{if } x > 2 \end{cases}$$

(a) Evaluate each of the following, if it exists. (If an answer does not exist, enter DNE.)

(i) $\lim_{x \rightarrow 1^-} g(x)$

(ii) $\lim_{x \rightarrow 1^+} g(x)$

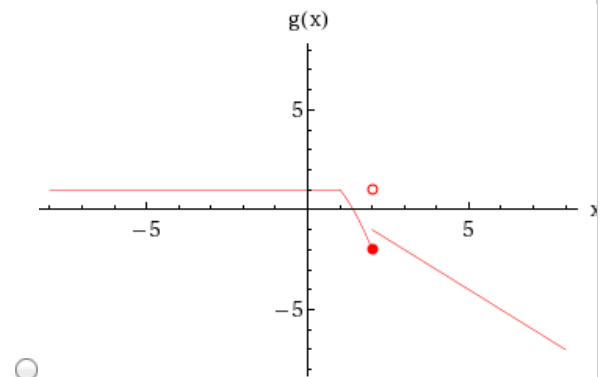
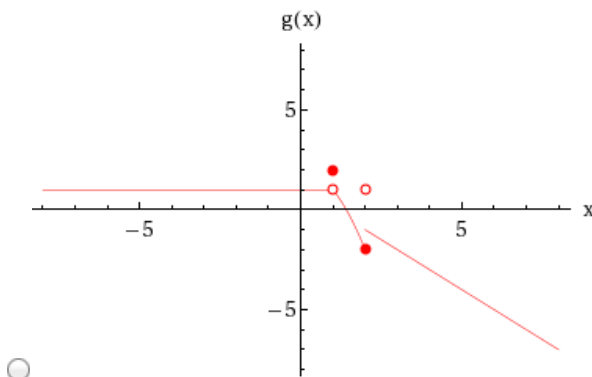
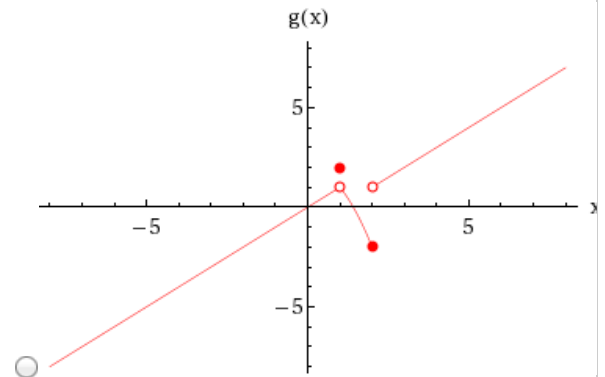
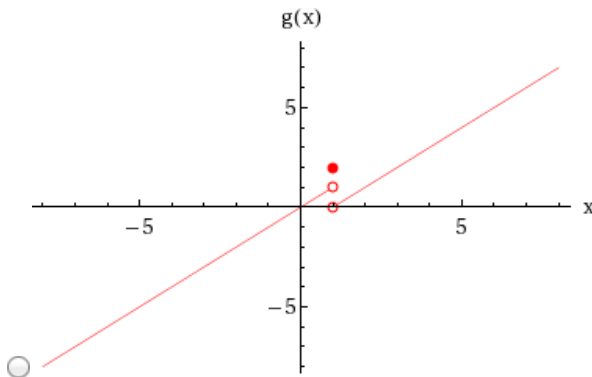
(iii) $g(1)$

(iv) $\lim_{x \rightarrow 2^-} g(x)$

(v) $\lim_{x \rightarrow 2^+} g(x)$

(vi) $\lim_{x \rightarrow 2} g(x)$

(b) Sketch the graph of g .



8. 0/3 points

SCalcET7 2.TF.002. [1637585]

Determine whether the statement is true or false.

$$\lim_{x \rightarrow 1} \frac{x^2 + 7x - 8}{x^2 + 6x - 7} = \frac{\lim_{x \rightarrow 1} (x^2 + 7x - 8)}{\lim_{x \rightarrow 1} (x^2 + 6x - 7)}$$

- True
- False

9. 0/3 points

SCalcET7 2.TF.003. [1637575]

Determine whether the statement is true or false.

$$\lim_{x \rightarrow 1} \frac{x - 1}{x^2 + 2x - 4} = \frac{\lim_{x \rightarrow 1} (x - 1)}{\lim_{x \rightarrow 1} (x^2 + 2x - 4)}$$

- True
- False

10. 0/3 points

SCalcET7 2.TF.015. [1644902]

Determine whether the statement is true or false.

If f is continuous at 5 and $f(5) = 4$ and $f(4) = 3$, then $\lim_{x \rightarrow 2} f(4x^2 - 11) = 4$.

- True
- False

11. 0/4 points

double rationalize [2312223]

Evaluate the limit, if it exists. (If an answer does not exist, enter DNE.)

$$\lim_{x \rightarrow 8} \left(\frac{\sqrt{12-x} - 2}{\sqrt{24-x} - 4} \right)$$

12. 0/1 points

SCalcET7 2.3.042.MI. [1639645]

Find the limit, if it exists. (If an answer does not exist, enter DNE.)

$$\lim_{x \rightarrow -5} \frac{6x + 30}{|x + 5|}$$

13. 0/2 points

SCalcET7 2.3.063. [1634049]

Find the number a such that the limit exists.

$$\lim_{x \rightarrow -2} \frac{3x^2 + ax + a + 3}{x^2 + x - 2}$$

$a =$

Find the value of the limit.

[Assignment Details](#)