

Week 3 Friday Homework (1319341)

Question 12345678910111213141516171819202122

1. Question DetailsSCalcET6 2.3.001. [679742]
Given the following limits, calculate the limits below, if they exist. (If it does not exist, enter NONE.)

$$\lim_{x \rightarrow 1} f(x) = 1$$

$$\lim_{x \rightarrow 1} g(x) = -5$$

$$\lim_{x \rightarrow 1} h(x) = 0$$

$$(a) \lim_{x \rightarrow 1} [f(x) + 5g(x)]$$

$$(b) \lim_{x \rightarrow 1} [g(x)]^3$$

$$(c) \lim_{x \rightarrow 1} \sqrt{f(x)}$$

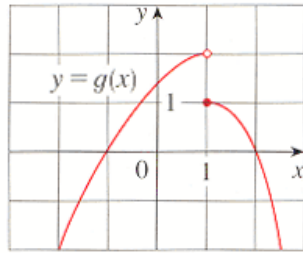
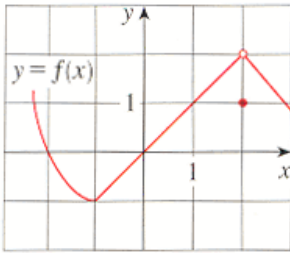
$$(d) \lim_{x \rightarrow 1} \frac{4f(x)}{g(x)}$$

$$(e) \lim_{x \rightarrow 1} \frac{g(x)}{h(x)}$$

$$(f) \lim_{x \rightarrow 1} \frac{g(x)h(x)}{f(x)}$$

2. Question DetailsSCalcET6 2.3.002. [656878]

The graphs of f and g are given. Use them to evaluate each limit, if it exists. If the limit does not exist, enter NONE.



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

(b) $\lim_{x \rightarrow 1} [f(x) + g(x)]$

(c) $\lim_{x \rightarrow 0} [f(x)g(x)]$

(d) $\lim_{x \rightarrow -1} \frac{f(x)}{g(x)}$

(e) $\lim_{x \rightarrow 2} x^3 f(x)$

(f) $\lim_{x \rightarrow 1} \sqrt{3 + f(x)}$

3. Question DetailsSCalcET6 2.3.009. [679871]

Evaluate the limit using the appropriate Limit Law(s). (If it does not exist, enter NONE.)

$$\lim_{x \rightarrow 6^-} \sqrt{36 - x^2}$$

4. Question DetailsSCalcET6 2.3.011. [679856]

Evaluate the limit, if it exists. (If it does not exist, enter NONE).

$$\lim_{x \rightarrow 5} \frac{x^2 + x - 30}{x - 5}$$

5. Question DetailsSCalcET6 2.3.013. [679741]

Evaluate the limit, if it exists. (If it does not exist, enter NONE).

$$\lim_{x \rightarrow 4} \frac{x^2 - x + 20}{x - 4}$$

6. Question DetailsSCalcET6 2.3.015. [780406]

Evaluate the limit, if it exists. (If it does not exist, enter NONE).

7. Question DetailsSCalcET6 2.3.AE.05. [1288666]

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EXAMPLE 5 Evaluate the limit below.

SOLUTION If we define

then we can't compute the limit by letting $h = 0$ since $F(0)$ is undefined. but if we simplify $F(h)$ algebraically, we find that

$$F(h) = \frac{(\text{input}) - 49}{h}$$

$$= \frac{\text{input}}{h} = \text{input}$$

(Recall that we consider only $h \neq 0$ when letting h approach 0.) Thus

8. Question DetailsSCalcET6 2.3.020.MI. [1387288]
Evaluate the limit, if it exists. (If it does not exist, enter NONE).

$$\lim_{h \rightarrow 0} \frac{(9 + h)^3 - 729}{h}$$

 [Tutorial](#)

9. Question DetailsSCalcET6 2.3.021. [679810]
Evaluate the limit, if it exists. (If it does not exist, enter NONE).

10. Question DetailsSCalcET6 2.3.023. [679804]
Evaluate the limit, if it exists. (If it does not exist, enter NONE).

11. Question DetailsSCalcET6 2.3.025. [679791]
Evaluate the limit, if it exists. (If it does not exist, enter NONE).

12. Question DetailsSCalcET6 2.3.028. [1073280]
Evaluate the limit, if it exists. (If it does not exist, enter NONE.)

13. Question DetailsSCalcET6 2.3.045. [679789]
The *signum* (or sign) function, denoted by sgn , is defined below. Use its definition or graph to find each of the following limits. (If a limit does not exist, enter NONE.)

14. Question DetailsSCalcET6 2.3.046. [679903]
Consider the function below. Use it to find the following limits.

(c) Does the limit of $f(x)$ as x approaches 4 exist?

Yes

No

15. Question DetailsSCalcET6 2.3.048. [679933]
Consider the function below. Use it to evaluate each of the following expressions. (If an expression does not exist, enter NONE.)

16. Question DetailsSCalcET6 2.3.055. [679756]
Consider the following limit.

Evaluate the following limit.

17. Question DetailsSCalcET6 2.3.060. [780398]
Evaluate the following limit. (If it does not exist, enter NONE.)

18. Question DetailsSCalcET6 2.5.002. [656842]
If f is continuous on $(-\infty, \infty)$, what can you with certainty say about its graph? (Select all that apply.)

- The graph of f has a hole.
- The graph of f has a jump.
- The graph of f has a vertical asymptote.
- None of these.

19. Question DetailsSCalcET6 2.5.004. [657180]

From the graph of g , state the intervals on which g is continuous. (Select all that apply.)

- $(-\infty, -4]$
- $(-\infty, -4)$
- $[-4, -2]$
- $[-4, -2)$
- $[-2, 2]$
- $(-2, 2)$
- $[2, 4]$
- $(2, 4)$
- $[4, 6]$
- $(4, 6)$
- $[6, 8]$
- $(6, 8)$
- $[8, \infty)$
- $(8, \infty)$

20. Question DetailsSCalcET6 2.5.009. [679711]

If f and g are continuous functions with $f(-2) = 3$ and the following limit, find $g(-2)$.

$$(a) f(x) = \frac{x^2 - 2x - 15}{x - 5}$$

$$(b) f(x) = \begin{cases} \frac{1}{x^4} & \text{if } x \neq 0 \\ 1 & \text{if } x = 0 \end{cases}$$

$$(c) f(x) = \begin{cases} \frac{x^2 - 2x - 15}{x - 5} & \text{if } x \neq 5 \\ 1 & \text{if } x = 5 \end{cases}$$

$$(d) f(x) = \lfloor x \rfloor$$

22. Question DetailsSCalcET6 2.5.037. [780409]

Find the numbers at which f is discontinuous and determine whether f is continuous from the right, or from the left, or neither.

$x =$

- continuous from the right
- continuous from the left
- neither

Assignment Details

Name (AD): **Week 3 Friday Homework (1319341)**

Submissions Allowed: **5**

Category: **Homework**

Code:

Locked: **No**

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