

**Skill Check 1: So Scared**

*Fundamentals*

Rating: \_\_\_\_\_

1. Provide the appropriate word and graph for  $f(x) = \sin(x)$ ,  $f(x) = \cos(x)$ , and  $f(x) = \frac{1}{x}$ .

2. Construct a unit circle with a detailed first quadrant.

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*Algebra*

Rating: \_\_\_\_\_

Determine the solution(s).

1.  $3|x + 5| = 14$

2.  $x^2 + x - 20 = 0$

3.  $0.5x^2 + 3x - 7 = 0.45x + 2$

4.  $3x^2 + 17x - 2 = 4$

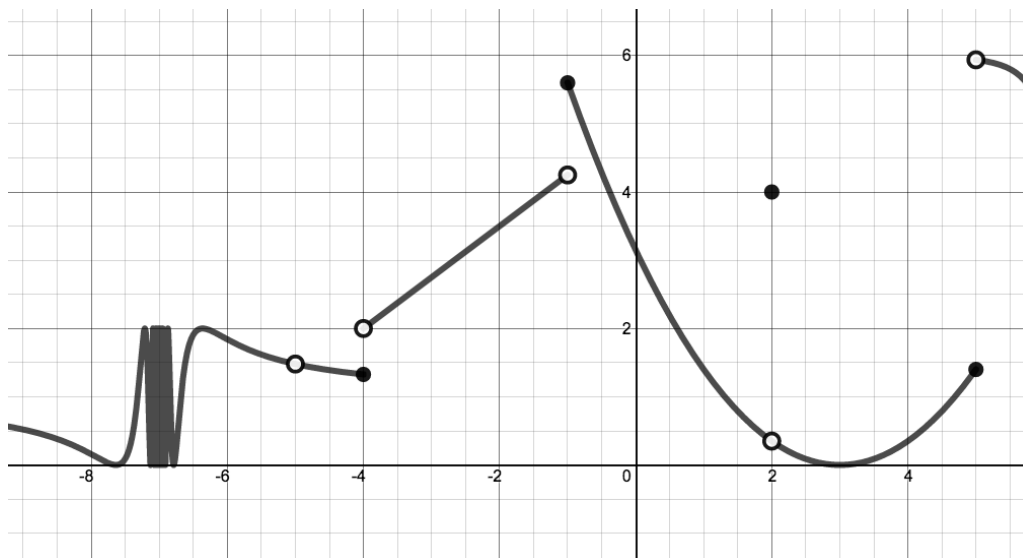
5.  $2|x + 3| = 22$

6.  $(x + 4)^2 + 3 = 15$

Limits

Rating: \_\_\_\_\_

A piecewise-defined function  $f(x)$  is provided.



Evaluate.

1.  $\lim_{x \rightarrow 2} f(x)$

2.  $\lim_{x \rightarrow 5^-} f(x)$

3.  $\lim_{x \rightarrow -1^+} f(x)$

4.  $\lim_{x \rightarrow 0} f(x)$

5.  $\lim_{x \rightarrow 1} \ln(2x + 3)$

6.  $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x}$

7.  $\lim_{x \rightarrow 2} e^x + 5$

8.  $\lim_{x \rightarrow \pi} 2 \sin x$

9. Identify three locations on  $f(x)$  where the limit fails to exist and state why.