

• Student Portion •

DIRECTIONS:

- ➔ Read each item carefully.
- ➔ Follow the directions to solve each problem.
- ➔ Circle your final answer(s).
- ➔ Round all answers to four decimal places unless otherwise specified.

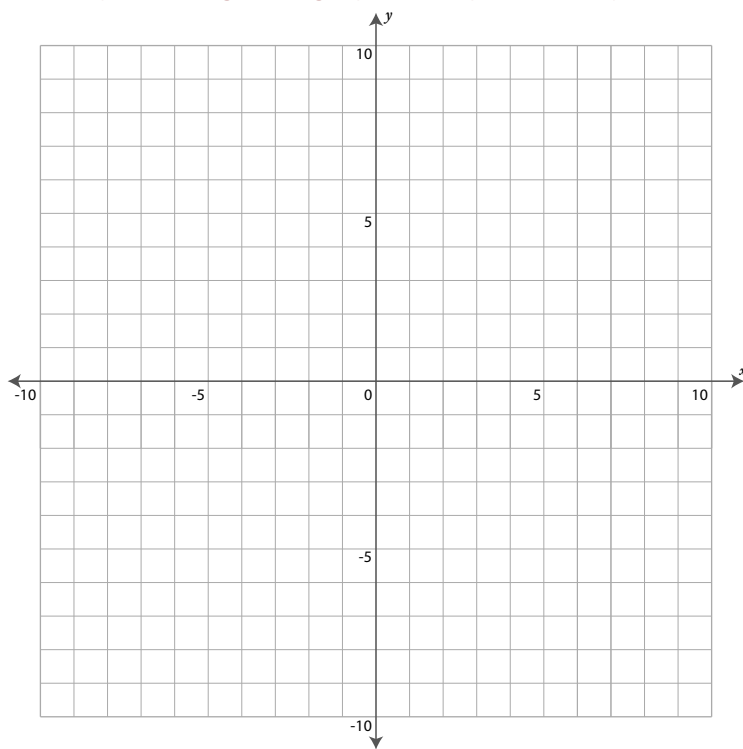
1. Simplify this expression.

$$\frac{2}{x+5} + \frac{5}{5-x} - \frac{10}{x^2-25}$$

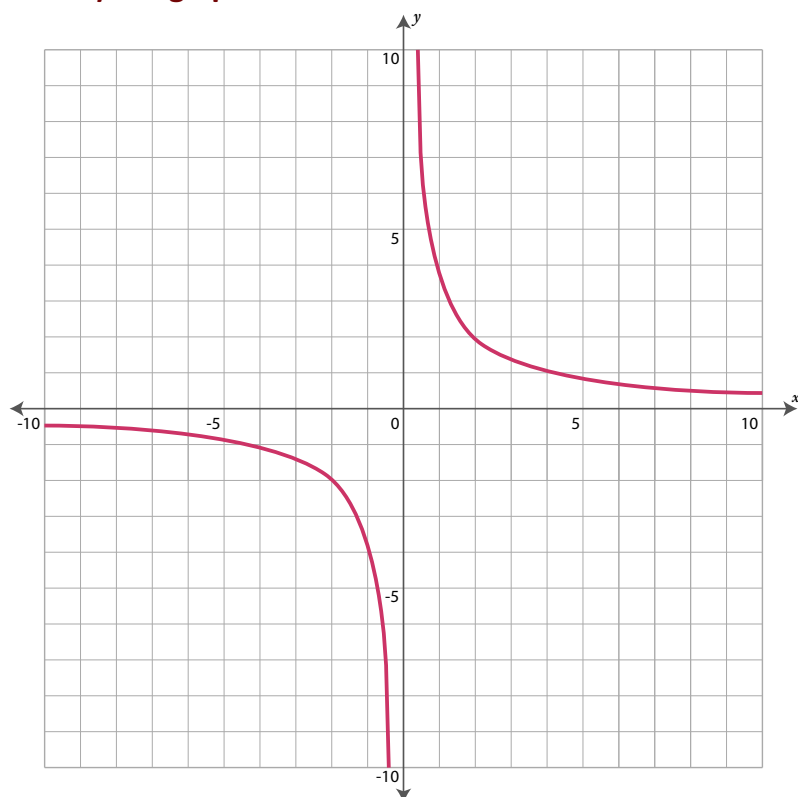
2. $y = x^2$

$$y = 2x^2$$

Write a sentence to explain the difference between the graphs of these two equations. (You may use the grid to graph the equations, if you would like.)



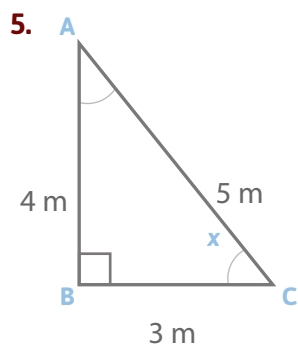
3. Study this graph.



Write a sentence that describes the asymptote(s).

4. Give the vertex for the parabola represented by the equation.

$$y = x^2 - 6x + 1$$



Triangle ABC is a right triangle. Find the secant of angle x .

6. Give the reference angle for -320° . You may make a drawing, if you wish.

7. Use ratios to evaluate the expression. Leave your answer in fractional form.

$$\sin 240^\circ + 2 \cos 300^\circ$$

8. Write an expression equivalent to $1 - \sin^2(x)$.

9. What ratio would be used to convert $\frac{7\pi}{4}$ radians into degrees?

10. Write the range of the function: $f(x) = \sqrt{x+3}$

11. $f(x) = 2x + 3$
 $g(x) = x^2$

Write an expression equivalent to: $g(f(x))$

12. Solve:

$$\log_2 x + \log_2 (x + 3) = 2$$

13. Solve for x . Round to four decimal places.

$$e^{2x} = 5$$

14. Without graphing, describe how the graph of $y = \sin 2\left(x - \frac{\pi}{4}\right)$ differs from the graph of $y = \sin x$.

15. Evaluate: $\lim_{x \rightarrow 1} 2x^2 - 6$