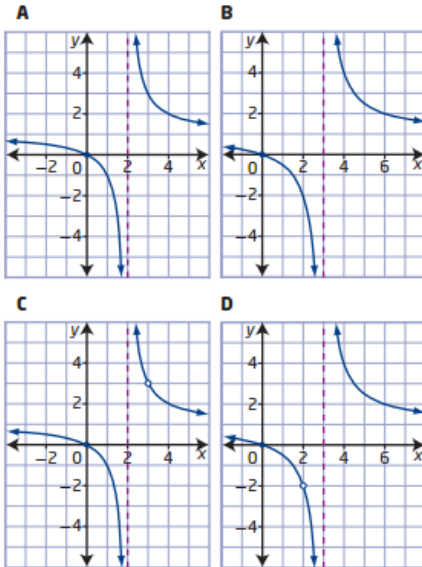


1. 2. Which graph represents $y = \frac{x^2 - 2x}{x^2 - 5x + 6}$?



2. Let $f(x) = (x + 3)^2$ and $g(x) = x + 4$. Which function represents the combined function $h(x) = f(x) + g(x)$?

- A $h(x) = x^2 + 7x + 7$
- B $h(x) = x^2 + 7x + 13$
- C $h(x) = x^2 + x + 13$
- D $h(x) = x^2 + 2x + 7$

3. If $y = \frac{x + 2}{x^2 - 3x - 10}$, which statement is true?

- A The equations of the vertical asymptotes are $x = -2$ and $x = 5$.
- B There is a point of discontinuity in the graph of the function at $(-2, -\frac{1}{7})$ and at $(5, 1)$.
- C The range is $\{x \mid x \neq -2, 5, x \in \mathbb{R}\}$.
- D The non-permissible values are $x = -2$ and $x = 5$.

4. The graph of a rational function has a horizontal asymptote at $y = 3$, a vertical asymptote at $x = -2$, and a y -intercept of 1. What is the equation of the function?

- A $y = \frac{4}{x + 2} + 3$
- B $y = \frac{-4}{x + 2} + 3$
- C $y = \frac{-9}{x - 3} - 2$
- D $y = \frac{9}{x - 3} - 2$

5. **e quadrant in which the angle θ lies.**
 $\tan \theta > 0$ and $\sin \theta < 0$

- A) Quadrant I
- B) Quadrant II
- C) Quadrant III
- D) Quadrant IV

6. Use the fact that the trigonometric functions are periodic to find the exact value of the expression.

- 6) $\sin 765^\circ$
- A) $-\frac{\sqrt{2}}{2}$
 - B) $\frac{1}{2}$
 - C) $-\frac{1}{2}$
 - D) $\frac{\sqrt{2}}{2}$

7. A point on the terminal side of angle θ is given. Find the exact value of the given trigonometric function.

- 4) $(12, 16)$; Find $\sin \theta$.
- A) $\frac{4}{3}$
 - B) $\frac{3}{4}$
 - C) $\frac{4}{5}$
 - D) $\frac{3}{5}$

8. Use the given values of the sine and cosine to find the function value.

- 8) $\sin \theta = -\frac{\sqrt{7}}{4}$, $\cos \theta = \frac{3}{4}$. Find $\cot \theta$.
- A) $\frac{\sqrt{7}}{3}$
 - B) $-\frac{3\sqrt{7}}{7}$
 - C) $\frac{4}{3}$
 - D) $-\frac{4\sqrt{7}}{7}$

9. Find the exact value of the requested trigonometric function of θ .

- 9) $\tan \theta = -\frac{8}{5}$ and θ in quadrant II
- Find $\cos \theta$.
- A) $\frac{\sqrt{89}}{8}$
 - B) $-\frac{\sqrt{89}}{5}$
 - C) $\frac{5\sqrt{89}}{89}$
 - D) $-\frac{5\sqrt{89}}{89}$

10. Find the area of a triangle with the given side lengths:

$a = 14$, $b = 32$, $c = 26$

- A) 177.99
- B) 182
- C) 5280
- D) 3219.69