

1. Describe the end behavior of the graph

$y = 3x^5 + 2x^2 - 4$

- A) $f(x) \rightarrow \infty$ as $x \rightarrow -\infty$ and $f(x) \rightarrow \infty$ as $x \rightarrow \infty$
- B) $f(x) \rightarrow \infty$ as $x \rightarrow -\infty$ and $f(x) \rightarrow -\infty$ as $x \rightarrow \infty$
- C) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ and $f(x) \rightarrow \infty$ as $x \rightarrow \infty$
- D) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ and $f(x) \rightarrow -\infty$ as $x \rightarrow \infty$

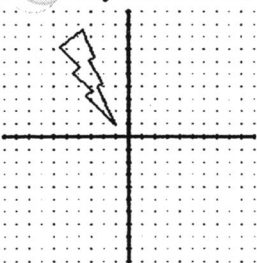
2. Factor $125x^3 - 8$

- A) $(5x - 2)(25x^2 + 10x + 4)$
- B) $(5x + 2)(25x^2 + 10x + 4)$
- C) $(5x - 2)(25x^2 - 10x + 4)$
- D) $(5x + 2)(5x^2 - 10x + 4)$

3. Simplify completely $\sqrt[4]{32x^5y^{10}}$

- A) $x^2y^2\sqrt[4]{32xy^2}$
- B) $2x^2y^2\sqrt[4]{xy^2}$
- C) $2x^2y^2\sqrt[4]{2}$
- D) $2x^2y^2\sqrt[4]{2xy^2}$

4. Identify the inverse:



- A)
- B)
- C)
- D)

For 5-6, $f(x) = 3x + 2$ $g(x) = x - 4$

5. find $f(g(x))$

- A) $4x - 2$
- B) $3x - 10$
- C) $3x - 2$
- D) $3x^2 - 10x - 8$

6. Find the domain of $\frac{f(x)}{g(x)}$

- A) Real Numbers, $x \neq 0$
- B) Real Numbers, $x \neq -\frac{2}{3}$
- C) Real Numbers, $x \neq 4$
- D) All Real Numbers

7. State the domain for $\sqrt{x - 7} + 2$

- A) Real Numbers, $x \leq 7$
- B) Real Numbers, $x \geq 7$
- C) Real Numbers, $x \neq 2$
- D) All Real Numbers

8. Solve for x $6^x = 96$

- A) $x = 16$
- B) $x = 2.1$
- C) $x = 576$
- D) $x = 2.5$

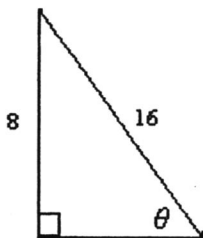
9. Solve for x $2^{x+4} = 4^x$

- A) $x = 4$
- B) $x = 2$
- C) $x = 0$
- D) $x = -3$

10. Find the distance between $(5, -8)(1, -6)$

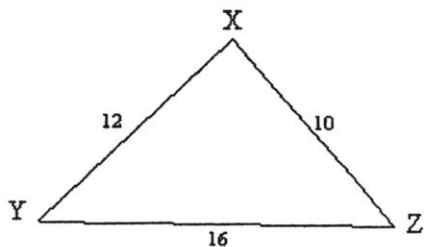
- A) $2\sqrt{5}$
- B) 2
- C) 20
- D) $5\sqrt{2}$

11. Find θ



- A) 4°
- B) 30°
- C) 60°
- D) 32.8°

12. Find the area of $\triangle XYZ$



- A) 80
- B) 96
- C) 60
- D) 780

13. Find the inverse: $f(x) = 3x^2 + 7$

- A) $f(x) = 3y^2 + 7$
- B) $f(x) = \sqrt{\frac{x+7}{3}}$
- C) $f(x) = \frac{1}{3}x^2 - 7$
- D) $f(x) = \frac{1}{3}\sqrt{x} - 7$

14. According to the rational root theorem, what are the possible solutions to the equation $f(x) = 5x^3 + 7x^2 - 2x + 10$?

- A) $\pm \frac{1}{7}, \pm \frac{5}{7}, \pm \frac{10}{7}$
- B) $\pm 5, \pm 7, \pm 2, \pm 10$
- C) $\pm \frac{2}{5}, \pm 1, \pm 2, \pm 10$
- D) What's the rational root theorem?

- 1.C
- 2.A
- 3.D
- 4.C
- 5.B
- 6.C
- 7.B
- 8.D
- 9.A
- 10.A
- 11.B
- 12.C
- 13.B
- 14.C