

Chapter 4 – Polynomials, Exponents, and Roots on the SAT

Pre Test

1.)

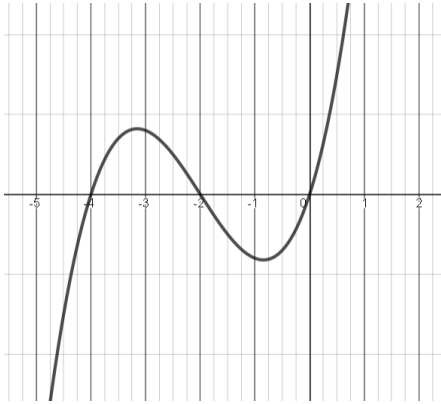
$$4a^4 - 20a^2b^2 + 25b^4$$

Which of the following is equal to the expression shown above?

- A) $(2a^2 - 5b^2)^2$
- B) $(2a - 5b)^4$
- C) $(4a^2 - 25b^2)^2$
- D) $(4a - 25b)^4$

2.)

Which of the following could be the equation for the polynomial function below?



- A) $y = x(x + 4)(x + 2)$
- B) $y = x^2(x - 4)(x - 2)$
- C) $y = x^2(x + 0.75)(x - 0.75)$
- D) $y = x(x - 3)(x - 1)$

3.)

If $0 \leq x \leq 1$, which of the following could be true?

- I. $x + 2 > x$
 - II. $x^2 > x$
 - III. $\frac{1}{x^2} > \frac{1}{x}$
- A) I Only
 - B) II and III
 - C) I and III
 - D) None

4.)

If $g^2h = b^{-1}k^3$ and $b, g, h,$ and $k \neq 0$, what is b in terms of $g, h,$ and k ?

- A) $\frac{g^2h}{k^3}$
- B) $\frac{k^3}{g^2h}$
- C) $\frac{gh^2}{k}$
- D) $\frac{k^3}{gh^2}$

5.)

Which of the following is equivalent to $x^{\frac{3}{4}}$?

A) $\sqrt[3]{x^4}$

B) $\sqrt[4]{x^3}$

C) $\sqrt{3x^4}$

D) $\sqrt{4x^3}$

6.)

Which of the following complex numbers is equivalent to $\frac{4+3i}{8-3i}$? (Note: $i = \sqrt{-1}$)

A) $\frac{1}{2} + i$

B) $\frac{1}{2} - \frac{i}{3}$

C) $\frac{33}{52} + \frac{9i}{13}$

D) $\frac{23}{73} + \frac{36i}{73}$

Answer Key:

1.) A

2.) A

3.) C

4.) B

5.) B

6.) D