Polynomials Pre-Test

1.
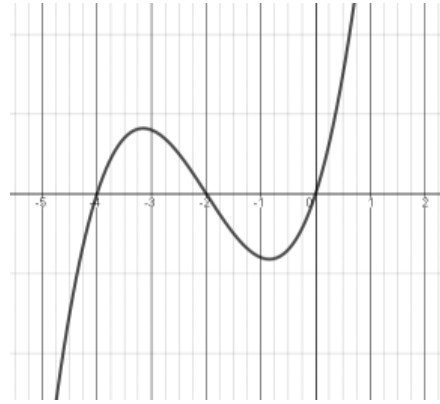
$$4a^4 - 20a^2b^2 + 25b^4$$

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) $y = x(x - 3)(x - 1)$

Polynomials Pre-Test

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

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

A) $\quad \frac{g^2 h}{k^3}$

B) $\quad \frac{k^3}{g^2 h}$

C) $\quad \frac{g h^2}{k}$

D) $\quad \frac{k^3}{g h^2}$

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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) $\sqrt{4x^3}$

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Polynomials Pre-Test

1. Answer

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

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) $(4a - 25b)^4$

Answer: A

Domain: 2 (Advanced Math)

Skill: c (Equivalent Expressions)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 6 (Find a shortcut)

2. Answer

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) $y = x(x - 3)(x - 1)$

Answer: A

Domain: 2 (Advanced Math)

Skill: a (Nonlinear function)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 2 (Desmos)

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Polynomials Pre-Test

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

Answer: C

Domain: 2 (Advanced Math)

Skill: a (Nonlinear functions)

Difficulty: 3 (Black Diamond / Hard)

Strategy: 4 (Number Picking)

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

A) $\frac{g^2 h}{k^3}$

B) $\frac{k^3}{g^2 h}$

C) $\frac{gh^2}{k}$

D) $\frac{k^3}{gh^2}$

Answer: B

Domain: 2 (Advanced Math)

Skill: c (Equivalent Expressions)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 1 (Pencil and handheld calculator only)

Polynomials Pre-Test

5. Answer

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) $\sqrt{4x^3}$

Answer: B

Domain: 2 (Advanced Math)

Skill: c (Equivalent Expressions)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 1 (Pencil and handheld calculator only)

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Polynomials Pre-Test