

Ottocento Lesson #17 Constants on Display Worksheet

Video Solutions at: <https://youtu.be/v7RndDU0rI>

Question 1

Which of the following equivalent forms of the linear function displays, as a constant or coefficient, the slope of the graph in the xy -plane?

A) $25 + 11x - y = -4x + 4y$

B) $-6x + 2y = 10$

C) $y = 3(x - 2) + 11$

D) $10x - 4y = -20 - 2x$

Question 2

$$ax + by = c$$

Which of the following equivalent forms of the given function displays, as a constant or coefficient, the x -coordinate of the x -intercept of the graph in the xy -plane? Note that a , b , and c are constants.

A) $y = \frac{c}{b} - \frac{a}{b}x$

B) $5 - y = \frac{a}{b}(x - \frac{c}{a}) + 5$

C) $ax - c = -by$

D) $-3ax - 3by = -3c$

Question 3

Which of the following equivalent forms of the function displays, as a constant or coefficient, the y -coordinate of the y -intercept of the graph in the xy -plane?

A) $6x + y = 4x^2 + 8$

B) $y = 2(2x^2 - 3x + 4)$

C) $y = 4(x - 0.75)^2 + 5.75$

D) $y + 3 = 2x(2x - 3) + 11$

Question 4

Which of the following equivalent forms of the function f displays, as a constant or coefficient, the minimum value of $f(x)$?

A) $f(x) = 2x^2 + 20x + 59$

B) $f(x) = 59 + 2x(x + 10)$

C) $f(x) = x(20 + 2x) + 59$

D) $f(x) = 2(x + 5)^2 + 9$



Question 5

The functions f and g are defined by the given equations, where $x \leq 0$. Which of the following equations displays, as a constant or coefficient, the maximum value of the function it defines, where $x \leq 0$?

I. $f(x) = (1.5625)(19.2)(1.25)^{x-2}$

II. $g(x) = 50(2.5)^{x-3}$

A) I only

B) II only

C) I and II

D) Neither I nor II

Question 6

The functions f and g are defined by the given equations, where $1 \leq x \leq 4$. Which of the following equations displays, as a constant or coefficient, the minimum value of the function it defines, where $1 \leq x \leq 4$?

I. $f(x) = 4(3)(1.25)^{x-3}$

II. $g(x) = (5^2)(0.8)^{x-1}$

A) I only

B) II only

C) I and II

D) Neither I nor II



Question 7

The functions f and g are defined by the given equations, where $2 \leq x \leq 5$. Which of the following equations displays, as a constant or coefficient, the maximum value of the function it defines, where $2 \leq x \leq 5$?

I. $f(x) = 6.25(5.76)(0.4)^x$

II. $g(x) = 75(3.75)^{x-5}$

A) I only

B) II only

C) I and II

D) Neither I nor II

Question 8

For the function f , for each increase in the value of x by 8, the value of $f(x)$ increases by a factor of r . Which of the following equivalent forms displays r as a constant or coefficient?

A) $f(x) = 16(4^{\frac{3}{7}})^{\frac{7}{24}x}$

B) $f(x) = 16(64)^{\frac{x}{24}}$

C) $f(x) = 16(32^{\frac{7}{2}})^{\frac{1}{70}x}$

D) $f(x) = 16(512^{\frac{13}{9}x})^{\frac{1}{52}}$



Question 9

For the function f , for each increase in the value of x by k , the value of $f(x)$

increases by a factor of 6. Which of the following equivalent forms displays $\frac{1}{k}$ as a constant or coefficient?

A) $f(x) = 15(6^{\frac{1}{2}})^{\frac{x}{6}}$

B) $f(x) = 15(2 \cdot 3)^{\frac{1}{12}x}$

C) $f(x) = 15(216^{\frac{5}{3}x})^{\frac{1}{60}}$

D) $f(x) = 15(6^{\frac{7}{6}})^{\frac{x}{14}}$

Question 10

The equations below each give a radical function when graphed in the xy -plane.

Which of the following equivalent forms of the function displays, as a constant or coefficient, the minimum value of the function in the xy -plane? Note that a , b , and c are constants and that $c < 0 < a < b$.

A) $y - 4c = a\sqrt{x + b} - 3c$

B) $\frac{5c + y - 6c}{a} = \sqrt{x + b}$

C) $y = a\sqrt{x + b} + c$