

Answer on Question #55820 – Math – Algebra

1. Solve the equation:

$$(x + 3)(x - 2) = 0$$

Enter the solution with the lowest value. _____

Solution

$$(x + 3)(x - 2) = 0 \text{ if and only if } x+3=0 \text{ or } x-2=0$$

$$x+3=0 \Rightarrow x = -3$$

$$x-2=0 \Rightarrow x=2$$

$$2 > -3$$

Enter the solution with the lowest value. **-3**

2. Solve the equation:

$$(3x + 2)(x - 5) = 0$$

Enter the solution with the highest value. _____

Solution

$$(3x + 2)(x - 5) = 0 \text{ if and only if } 3x+2=0 \text{ or } x-5=0$$

$$3x+2=0 \Rightarrow x=-2/3$$

$$x-5=0 \Rightarrow x=5$$

$$5 > -2/3$$

Enter the solution with the highest value. **5**

4. Solve by factoring:

$$x^2 - 13x - 14 = 0$$

A: $x = -14, x = 1$

B: $x = -1, x = 14$

C: $x = -2, x = 7$

Solution

$$x^2 - 13x - 14 = x^2 - 14x + x - 14 = x(x-14) + (x-14) = (x-14)(x+1) = 0 \Rightarrow x=14, x=-1$$

Answer: B: $x = -1, x = 14$

5. Simplify: $\sqrt{-36}$

The root extends over the -36, just as all of the other numbers starting with $\sqrt{}$: $\sqrt{-36}$

A: $-6i$

B: $6i\sqrt{2}$

C: $6i$

D: $-6i\sqrt{2}$

Solution

$$\sqrt{-36} = \sqrt{-1 \cdot 6^2} = 6\sqrt{-1} = 6i$$

Answer: C: 6i

6. Simplify: $-\sqrt{-75}$

A: $-5i$

B: $5i$

C: $-5i\sqrt{2}$

D: $-5i\sqrt{3}$

Solution

$$\sqrt{-75} = \sqrt{-1 \cdot 5^2 \cdot 3} = 5\sqrt{-1}\sqrt{3} = 5i\sqrt{3}.$$

Answer: D: $5i\sqrt{3}$.