GRE Prep

Inequalities and Exponents

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Inequalities and Exponents

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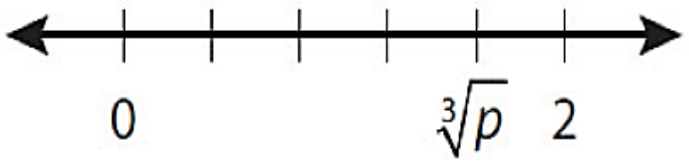
1.



In the number line above, what is the value of p?

A. 3/2

B. 8/5

C. 24/15

D. 512/125

E. 625/256

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2. If $6 < 2x - 4 < 12$, which of the following may be the value of x?

   A. 4

   B. 5

   C. 7

   D. 8

   E. 9

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3. If $|1 - x| = 6$ and $|2y - 6| = 10$, which of the following could be the value of xy? Indicate all such values.

   A. -40

   B. -14

   C. -10

   D. 56

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4. If $2^2 < \frac{x}{(2^6 - 2^4)} < 2^3$, which of the following could be the value of x? Indicate all such values.

   A. 24
   B. 64
   C. 80
   D. 128
   E. 232
   F. 256

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5. $n < 2n < n^2$

Quantity A	Quantity B
$\frac{n}{2} + 1$	n

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6. $-1 < z < 1$ and $z \neq 0$

Quantity A	Quantity B
$z^5 + z^7$	$z^4 + z^6$

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7. $x^2 < x$ and $y > 0$

Quantity A	Quantity B
$\lvert x \rvert + \lvert y \rvert$	$\lvert x + y \rvert$

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8. $\frac{x}{y} > 1$

Quantity A	Quantity B
$\frac{x}{y} + \frac{y}{x}$	2

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9. $|2x - 3| < 9$

Quantity A	**Quantity B**
x	-6

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10. $1 < x < 2, 3 < y < 4, 5 < z < 6$

Quantity A	**Quantity B**
xy	$\frac{z}{6}$

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11. $3 < x < y < 7$

Quantity A	Quantity B
$\frac{1}{x} - \frac{1}{y}$	$\frac{1}{3} - \frac{1}{7}$

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12. $m < 0$

Quantity A	**Quantity B**
$\|m\| + \|3\|$	$\|m - 3\|$

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13. If $\left| -\frac{x}{4} + 1 \right| < 3$, which of the following must be true? Indicate <u>all</u> such expressions.

    A. $x > 0$

    B. $x < 16$

    C. $x > -10$

    D. $-8 < x < 8$

    E. $x > -8$

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14. $\sqrt{x} < x < x^2$

Which of the following can be true? Select all that apply.

A. $x < 0$

B. $0 < x < 1$

C. $x > 1$

D. $x < -1$

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15. $-y < x < y$

For the inequality above, which of the following must be true? Indicate <u>all</u> such expressions.

A. $y > -x$

B. $x - y > 0$

C. $x + y > 0$

D. $x < 0$

E. $y > 0$

F. $|x| > 0$

G. $|y| > 0$

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16. If $-3 \leq m \leq 3$ and $-2 \leq n \leq 1$, then which of the following can be the value of mn?

Indicate <u>all</u> such values.

A. -5

B. -3

C. 0

D. 3

E. 6

F. 8

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17. If $|3x + 7| \geq 2x + 12$, then which of the following is true?

A. $x \leq \frac{-19}{5}$

B. $x \geq \frac{-19}{5}$

C. $x \geq 5$

D. $x \leq \frac{-19}{5}$ or $x \geq 5$

E. $\frac{-19}{5} \leq x \leq 5$

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18.

Quantity A	Quantity B
$(400)^{200}$	$(200)^{400}$

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19. M represents the minimum positive value of $|15x + 20y|$ where x and y are different integers.

Quantity A	Quantity B
M	5

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20. If $x^2 + x - 6 < 0$, what is the number of possible values of integer x which satisfy the given inequality?

Thank you