Algebra 1 EOC Student Guide

Test-Taking Style

Maximizing Your Mental Game:

The key to maintaining your engagement is to _____.

Four key ways to accomplish this:

1.
2.
3.
4.

Take _____ as often as needed, but everyone should take at least one (remember, the EOC test is untimed).

Take a few laps through the test:

First lap: _____.

Second lap: _____.

Use the _____ feature: do not feel like you have to take the test sequentially.

Test-Taking Strategies

Answer choices

You will never have the same answer _____times in a row.

Guessing? Use the letter _____.

Also, make sure you know this term: **STATISTICAL WINS**.

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Math Test Strategies…

1. BE ANSWERCENTRIC: USE ANSWER CHOICES TO HELP SOLVE THE PROBLEM!

Let's look at a few problems involving exponent rules:

For x > 1, the expression $\frac{2x^3}{2x^5}$ is equivalent to:

A) $\frac{1}{2}$
B) $-x^2$
C) $-\frac{1}{x^2}$
D) $\frac{1}{x^2}$

$(3x^3)^3$ =

A) $9x^6$
B) $9x^9$
C) $27x^6$
D) $27x^9$

We can also do the same when combining like terms…

$5x^2$ + 7x – 11 + $3x^2$ – 2x + 6 =

A) $8x^4$
B) $8x^4$ + 5x – 5
C) $8x^2$ + 5x -5
D) $8x^2$ + 5x + 5

10x^2 + 40x – 65 - 18x^2 – 6x + 37 is equivalent to:

A) -28x^2 + 34x + 37
B) -8x^2 + 34x – 28
C) 8x^2 – 46x + 37
D) 28x^2 – 46x – 28

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Distribution is another good use of this strategy:

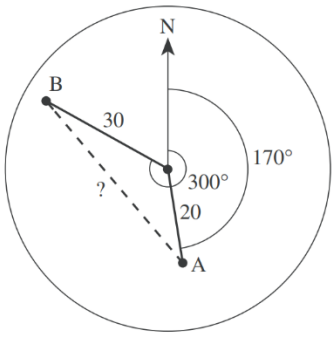
(4x + 3)(x – 2) =

A) $4x^2 - 5x - 6$
B) $4x^2 + 5x - 6$
C) $4x^2 - 6$
D) $4x^2 + 1$

Answer choices provide great information:

41. In the figure below, a radar screen shows 2 ships. Ship A is located at a distance of 20 nautical miles and bearing 170°, and Ship B is located at a distance of 30 nautical miles and bearing 300°. Which of the following is an expression for the straight-line distance, in nautical miles, between the 2 ships?

(Note: For $\triangle ABC$ with side of length a opposite $\angle A$, side of length b opposite $\angle B$, and side of length c opposite $\angle C$, the law of cosines states $c^2 = a^2 + b^2 - 2ab \cos \angle C$.)



A. $\sqrt{20^2 + 30^2 - 2(20)(30)\cos 60°}$
B. $\sqrt{20^2 + 30^2 - 2(20)(30)\cos 130°}$
C. $\sqrt{20^2 + 30^2 - 2(20)(30)\cos 170°}$
D. $\sqrt{20^2 + 30^2 - 2(20)(30)\cos 300°}$
E. $\sqrt{20^2 + 30^2 - 2(20)(30)\cos 470°}$

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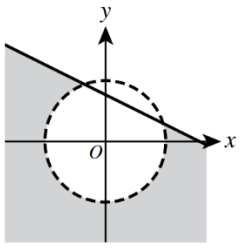
This even works when you have no idea how to even solve the problem:

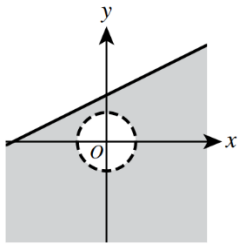
56. In one of the following graphs in the standard (x,y) coordinate plane, the solution set to the system of inequalities below is shown shaded. Which one?

$$\begin{cases} x + 2y \leq 6 \\ 3x^2 > 12 - 3y^2 \end{cases}$$

F.



J.



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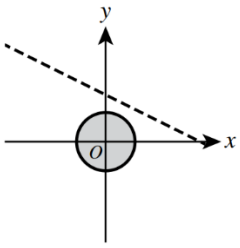
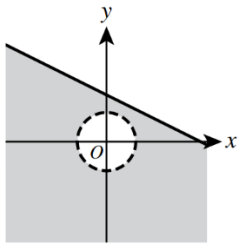
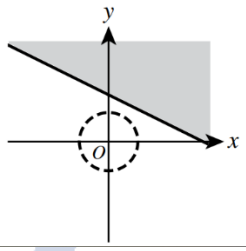


K.



H.



Moral of the story here:

Don't just randomly guess; rather, make an EDUCATED GUESS.

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2. When Algebra has you stumped, just try plugging in!

If $c < d$, then $|c - d|$ is equivalent to which of the following?

A) $c + d$
B) $-(c + d)$
C) $c - d$
D) $-(c - d)$

This works on many word problems converted into algebraic expressions:

If a publisher charges $15 for the first copy of a book that is ordered and $12 for each additional copy, which of the following expressions represents the cost of *y* books?

A) $12y + 3$
B) $12y + 15$
C) $15y - 3$
D) $15y + 12$

On Saturday afternoon, Armand sent m text messages each hour for 5 hours, and Tyrone sent p text messages each hour for 4 hours. Which of the following represents the total number of messages sent by Armand and Tyrone on Saturday afternoon?

A) 9mp
B) 20mp
C) 5m+4p
D) 4m + 5p

Let's now revisit the problems we have already worked, but this time we will PLUG IN.

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Does It Make Sense?

Kathy is a repair technician for a phone company. Each week, she receives a batch of phones that need repairs. The number of phones that she has left to fix at the end of each day can be estimated with the equation P = 108 – 23d, where P is the number of phones left and d is the number of days she has worked that week. What is the meaning of the value 108 in this equation?

A) Kathy will complete the repairs within 108 days.
B) Kathy starts each week with 108 phones to fix.
C) Kathy repairs phones at a rate of 108 per hour.
D) Kathy repairs phones at a rate of 108 per day.

$$h = 3a + 28.6$$

A pediatrician uses the model above to estimate the height h of a boy, in inches, in terms of the boy's age a, in years, between the ages of 2 and 5. Based on the model, what is the estimated increase, in inches, of a boy's height each year?

A) 3
B) 5.7
C) 9.5
D) 14.3

Jerome is a MRI technician at a local hospital. Each week, he has a certain number of patients in need of MRI imaging. The number of patients he has left at the end of each day can be estimated with the equation P(d) = 36 – 8d, where P is the number of patients left and d is the number of days he has worked that week. What is the meaning of the value 36 in this equation?

A) It will take Jerome 36 days to see each patient.
B) Jerome starts each week with 36 patients to see.
C) Jerome sees 36 patients per hour.
D) Jerome sees 36 patients per day.

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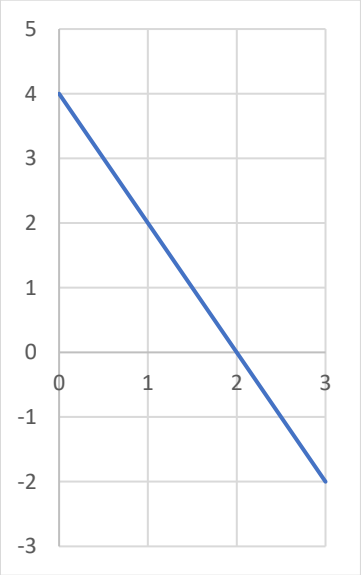
Graphs



Which of the following is the slope the line graphed above?

A) -2

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

C) $\frac{1}{2}$

D) 2

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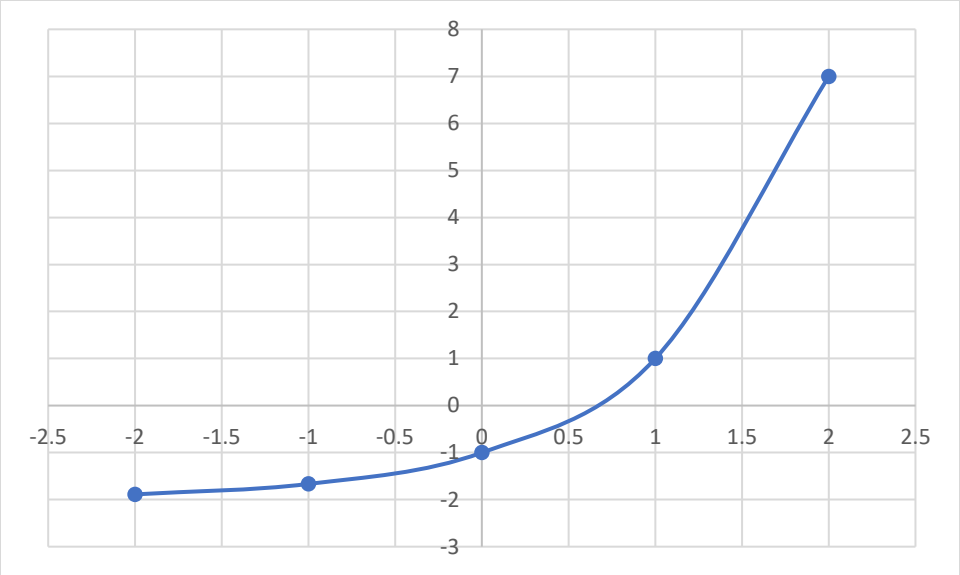

Which of the following equations represents the graph shown above?

A. $y = 4^x - 2$
B. $y = 3^x - 2$
C. $y = 3^x - 1$
D. $y = 4^x - 1$

Reading Techniques

Be sure to read each problem <u>CAREFULLY</u>. Don't burn through it!

Marshawn is a web developer and charges an upfront monthly rate of $1000 for his services, which includes 14 hours of service, and each additional hour is billed at a rate of $70 per hour. If a business hires Marshawn and the three owners decide to evenly split the cost of his services, which of the following algebraic expressions best represents the monthly cost for each business owner if Marshawn works *x* hours that month (note: $x \geq 14$)?

A) $\frac{70x+1000}{3}$
B) $\frac{70(x-14)+1000}{3}$
C) 210x + 3000
D) $\frac{14\,(70x+1000)}{3}$

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A shelf in a grocery store holds gallon jugs of water. The shelf has space for a maximum capacity of 30 gallons, but can hold no more than 210 pounds of weight. If each gallon of water weighs approximately 8.34 pounds, then what is the maximum number of gallons the shelf can hold?

A) 25
B) 26
C) 30
D) 834

A hot-air balloon 70 meters above the ground is falling at a constant rate of 6 meters per second while another hot-air balloon 10 meters above the ground is rising at a constant rate of 15 meters per second. To the nearest tenth of a second, after how many seconds will the 2 balloons be the same height above the ground?

A) 8.9
B) 6.7
C) 2.9
D) 0.4