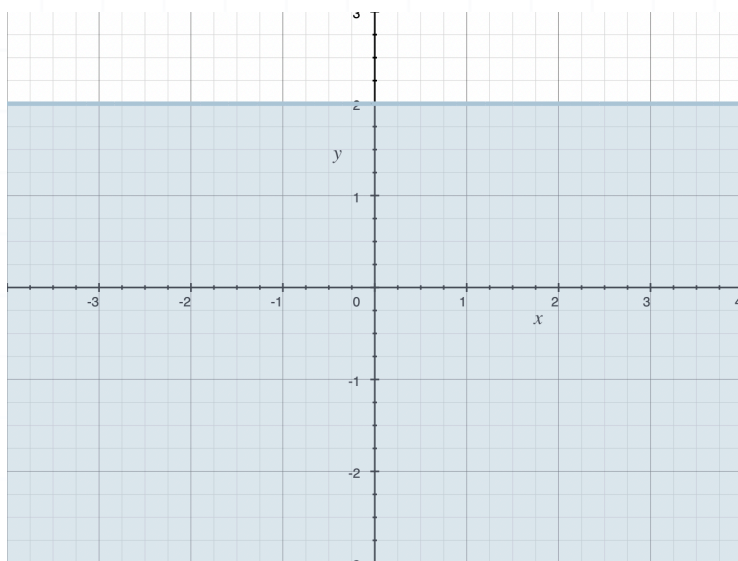
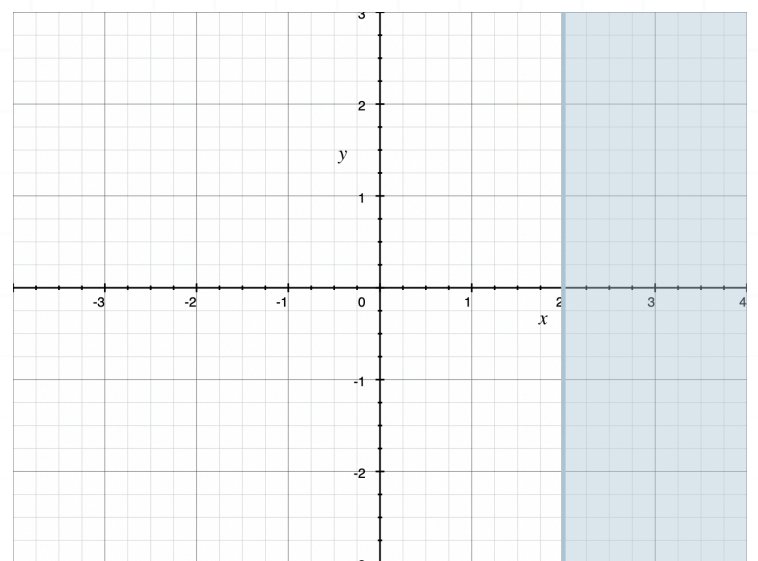
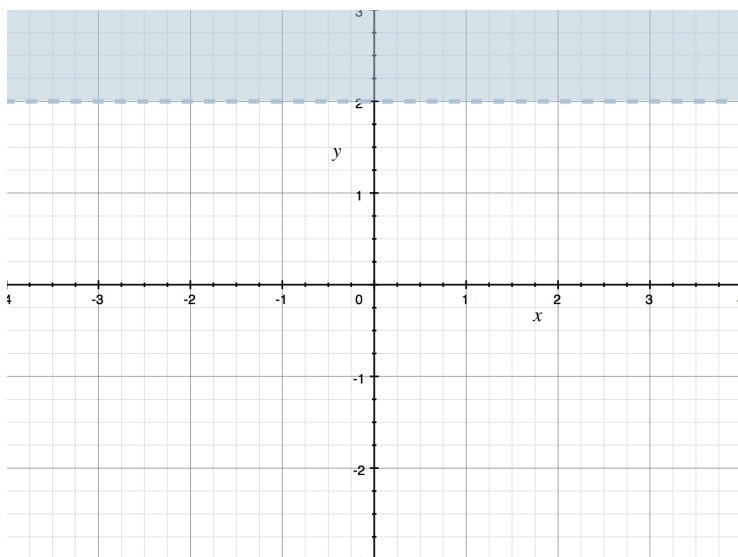
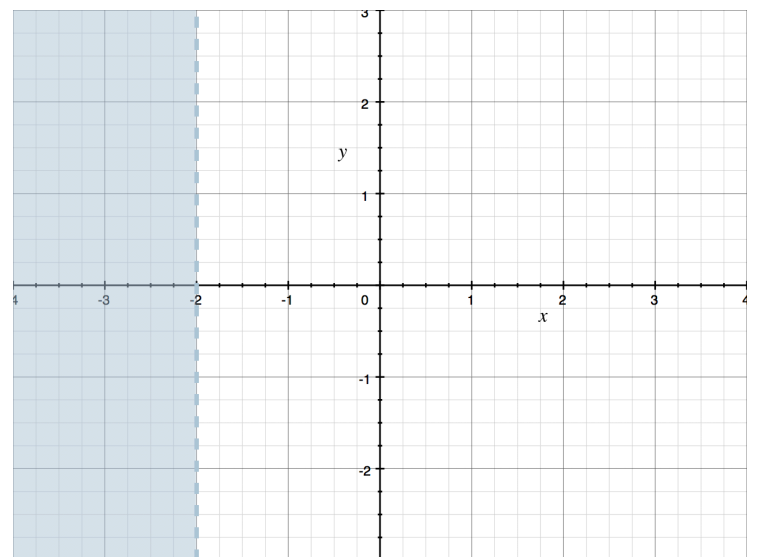


Topic: Graphing inequalities in the plane**Question:** Graph the linear inequality in the Cartesian coordinate system.

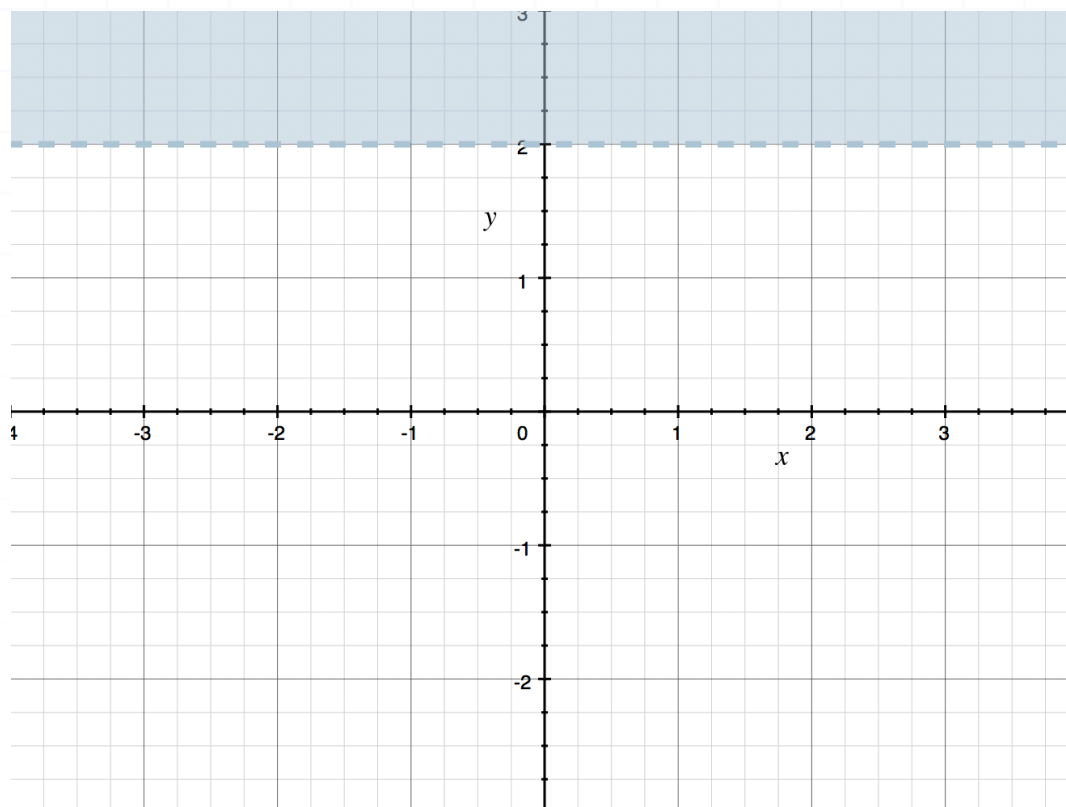
$$y > 2$$

Answer choices:**A****B****C****D**

Solution: C

Since we're looking for all of the space where y is greater than 2, we need to draw the line $y = 2$ and shade in everything above it.

Because the inequality is $y > 2$ and not $y \geq 2$, we have to make sure we draw a dashed or dotted line at $y = 2$ to indicate that the boundary line is not included in the graph of the inequality.

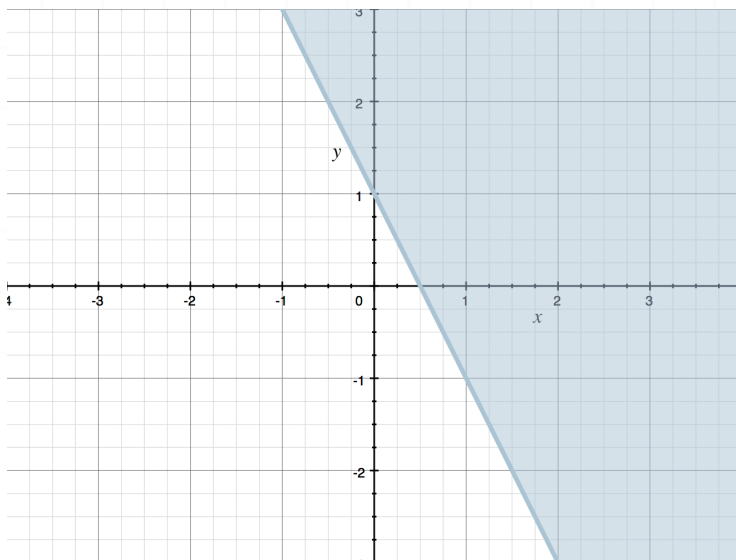


Topic: Graphing inequalities in the plane

Question: Graph the linear inequality in the Cartesian coordinate system.

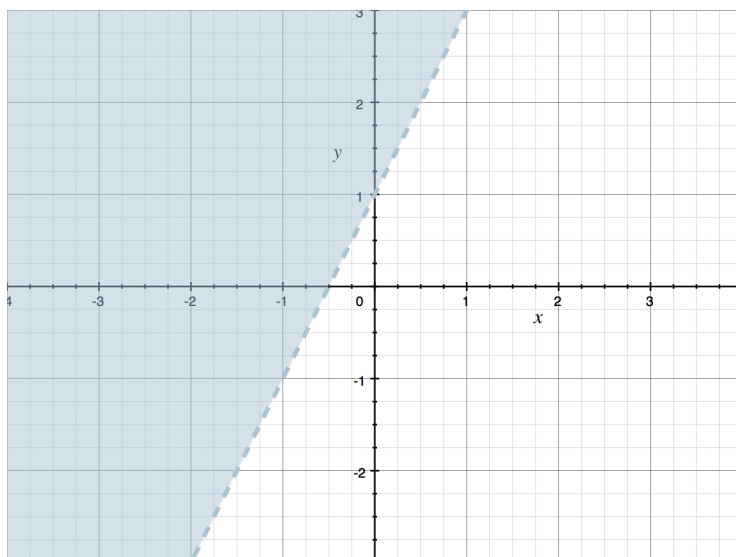
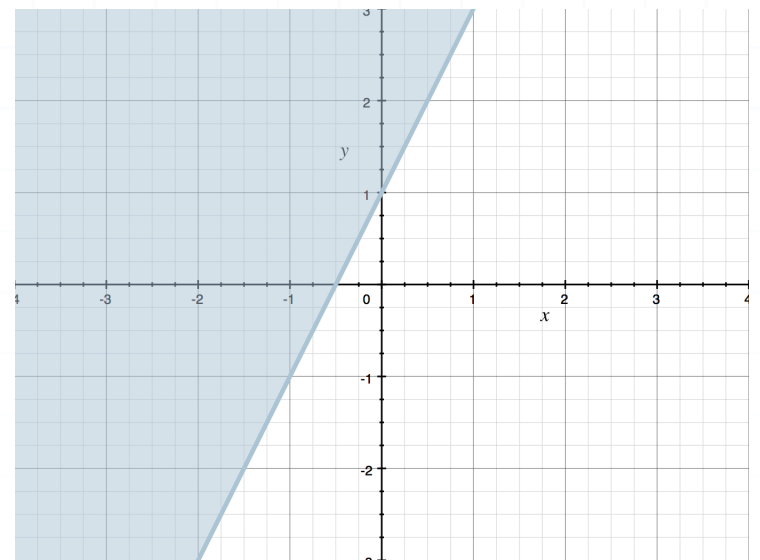
$$y \geq -2x + 1$$

Answer choices:



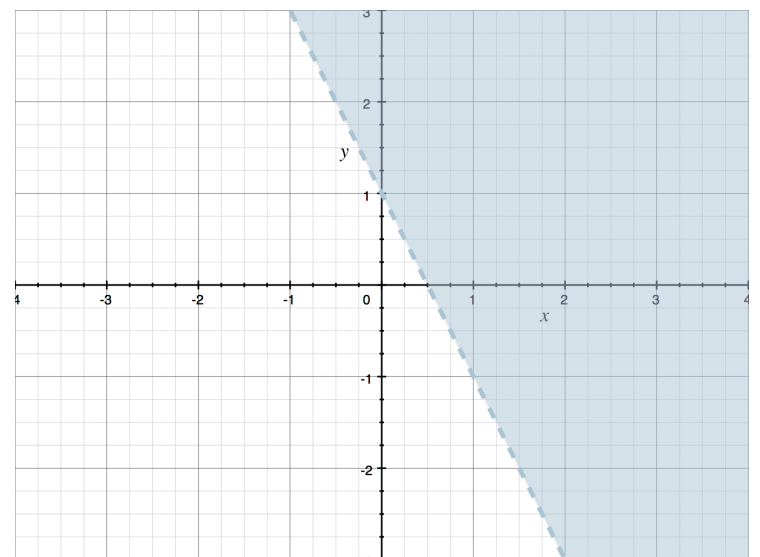
A

B



C

D



Solution: A

Since we're looking for all of the space where y is greater than or equal to $-2x + 1$, we need to draw the line $y = -2x + 1$ and shade in everything above it.

Because the inequality is $y \geq -2x + 1$ and not $y > -2x + 1$, we have to make sure we draw the line $y = -2x + 1$ as a solid line, to indicate that the boundary line is included in the graph of the inequality.

To draw the boundary line, all we need to do is get the coordinates of any two points on it. If we let $x = 0$, we get

$$y = -2(0) + 1 = 1$$

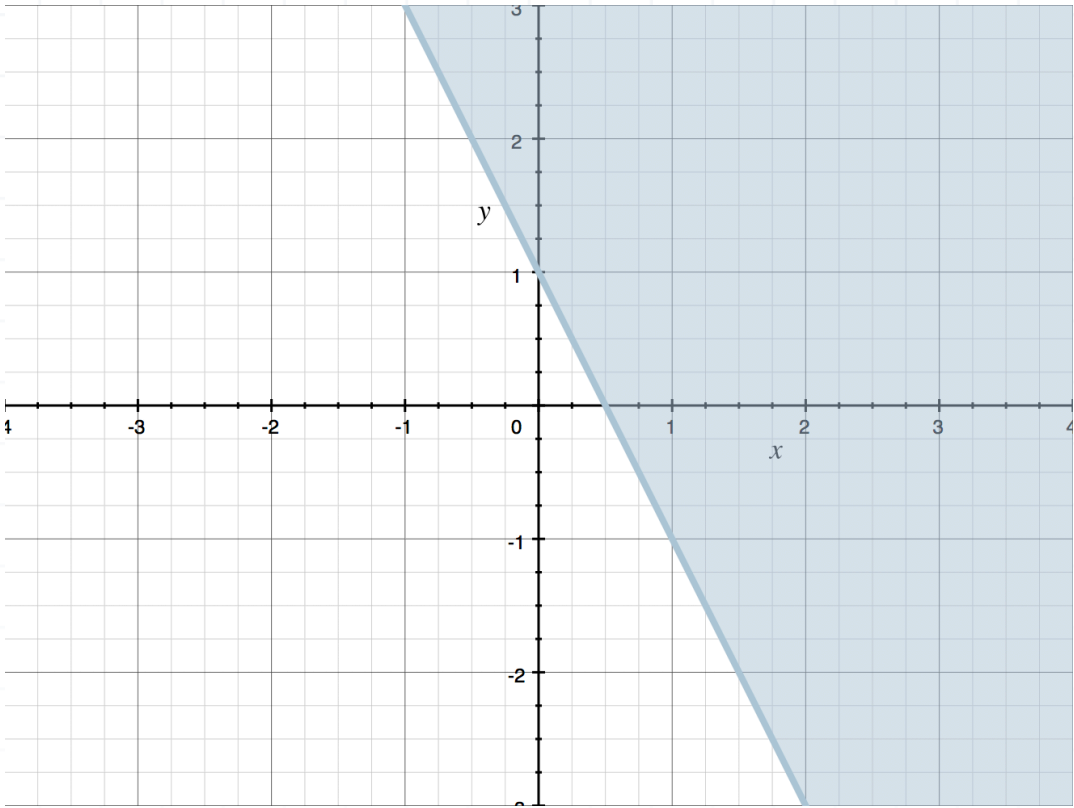
So the point $(0,1)$ is on the boundary line. If we let $x = 1$, we get

$$y = -2(1) + 1 = -1$$

So the point $(1, -1)$ is also on the boundary line.

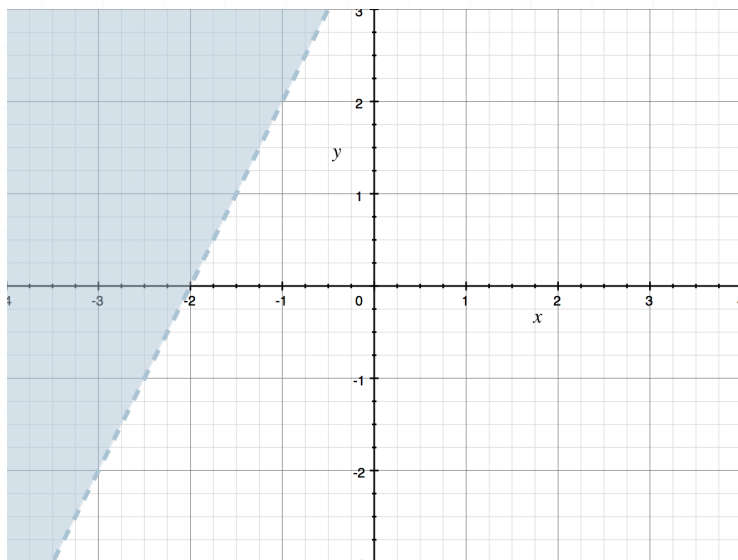
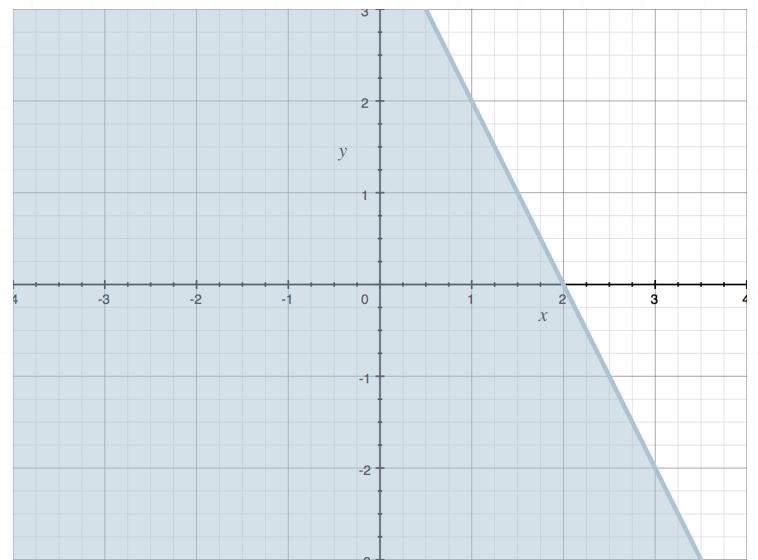
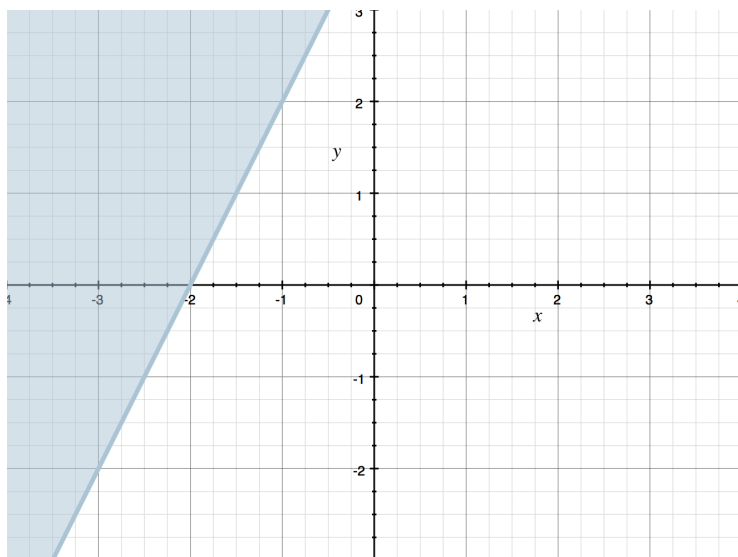
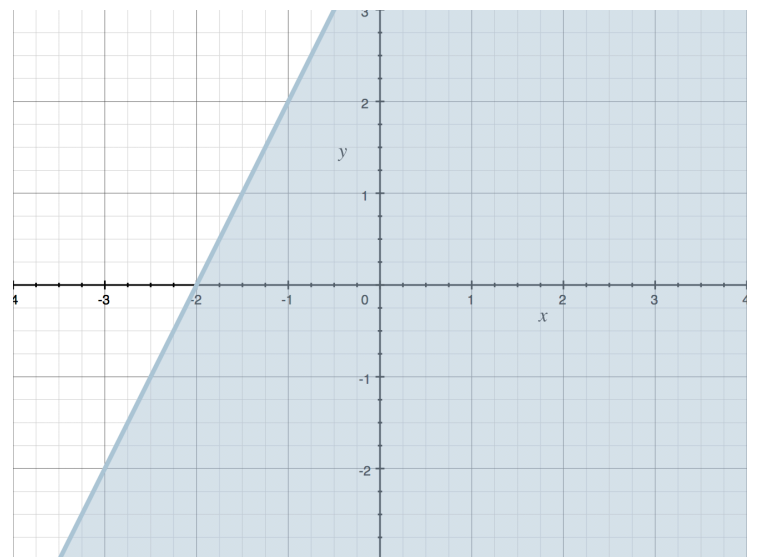
Now we'll draw the solid line that passes through those two points, and then shade in everything above that line.





Topic: Graphing inequalities in the plane**Question:** Graph the linear inequality in the Cartesian coordinate system.

$$y \leq 2x + 4$$

Answer choices:**A****B****C****D**

Solution: D

Since we're looking for all of the space where y is less than or equal to $2x + 4$, we need to draw the line $y = 2x + 4$ and shade in everything below it.

Because the inequality is $y \leq 2x + 4$ and not $y < 2x + 4$, we have to make sure we draw the line $y = 2x + 4$ as a solid line, to indicate that the boundary line is included in the graph of the inequality.

We'll get the coordinates of two points on the boundary line, and then draw the line that passes through those two points. If we let $x = 0$, we get

$$y = 2(0) + 4 = 4$$

So the point $(0,4)$ is on the boundary line. If we let $x = 1$, we get

$$y = 2(1) + 4 = 6$$

So the point $(0,4)$ is on the boundary line. If we let $x = 1$, we get

$$y = 2(1) + 4 = 6$$

So the point $(1,6)$ is also on the boundary line.

Now we'll draw the solid line that passes through those two points, and then shade in everything below that line.



