Training Header Sheet with Change Log Form

Kentucky Math Operational

Grade 10/Math
Line Graph Auto Repair Company_MA1020185
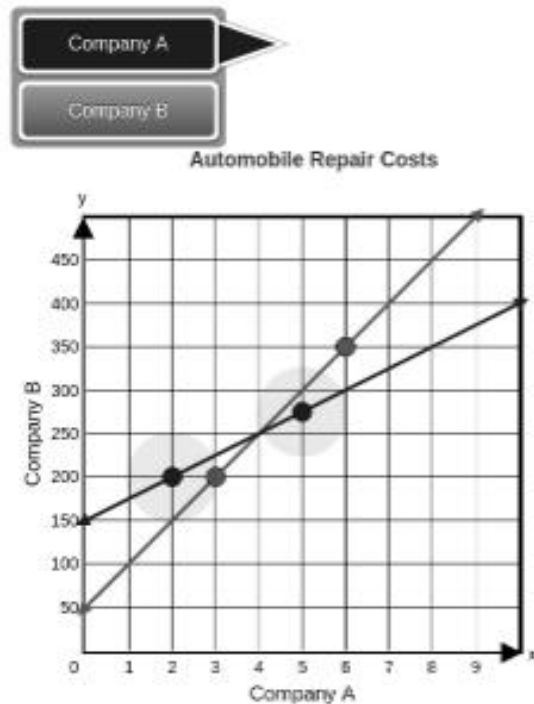
Qualification Sets

Date	Comments	Version
2.2022	Initial Operational Training Set	Set A

Part A

Cassidy compares the costs of two different automobile repair companies. Company A charges $200 for 2 hours of work and $275 for 5 hours of work. Company B charges $200 for 3 hours of work and $350 for 6 hours of work. Graph the system of equations that relates the hours of work, x, to the cost, y.

To graph each line, select two points on the coordinate plane. A line will be drawn through the points.

Company A

Company B

Automobile Repair Costs

Company A

Part B

Describe how the equations of the lines on the graph relate to the situation. Include the equations in your descriptions.

Describe how the intersection of the lines on the graph relates to the situation. Include the intersection point in your description.

Enter your descriptions in the space provided.

Line A has an equation of $y = 25x + 150$. This means that all work starts off with a $150 fee and $25 per hour after that.

Line B has an equation of $y = 50x + 50$. This means that all work starts off with a $50 fee and is $50 an hour after that.

The intersection of these two lines is where you will be paying equal amounts at each company. So at 4 hours of work you would pay $250 at both companies.
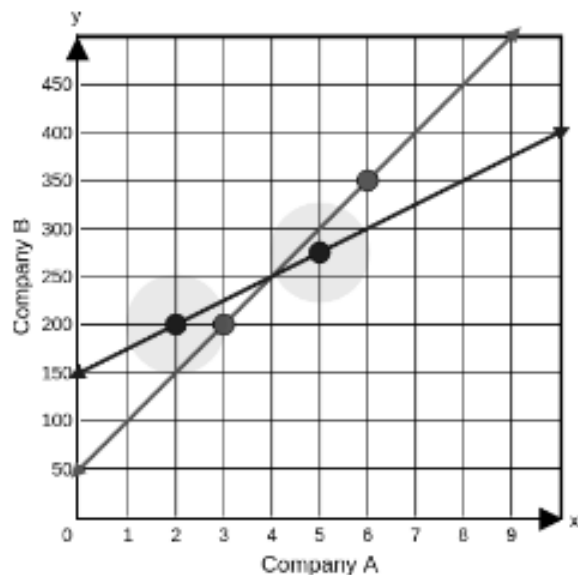
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The two lines(cost of companys' work) inersects at 4 hours and $250. Anything before this point Company B is cheaper, anything after Company A is Cheaper. Company A starts at $150 and increases $25 dollars every hour. Company B stars a $50 and increases $50 dollars every hour.
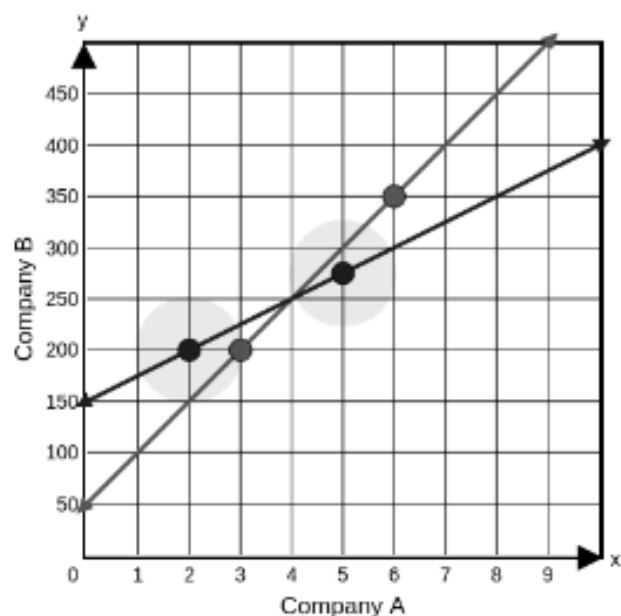
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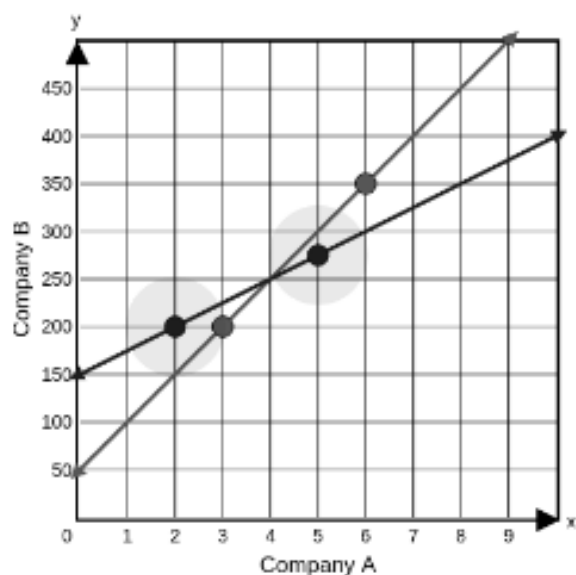company a would be cheaper than b beacuse the price for b is going higher than a

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The graphs relate showing the correlation between the two companies and the expenses you will pay them. Company A's equation is . Company B's equation is $y = 50x + 100$. The intersection point is the point where the cost you will pay is equal. That point is (4,250), which means at 4 hours of work you will pay both companies $250.
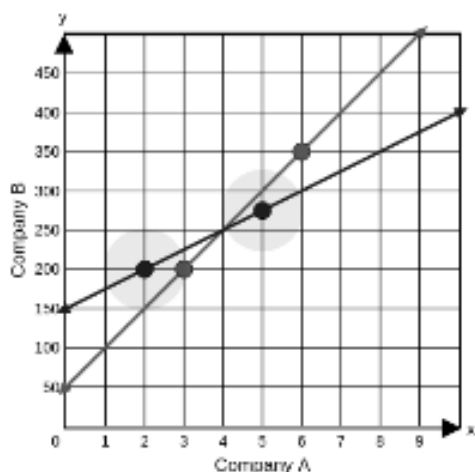
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The slope of each line represents the cost of fixing a car per hour and the y intercept value represents the flat fee that is charged every time no matter how many hours are spent working on the car. For comapny A the equation is $y = \frac{175}{3}x + 150$ meaning for every 3 hours spend on the car it cost $150, but an additional $150 is added anyways as a service fee. The equation for company B is $y = 50x + 50$ so it cost $50 per hour to have your car worked on with a flat fee of $50 as well.

The intersection of the lines represents that after 4 hours of work at both companies it will cost the same amount ($250). The point of intersection is at (4, 250) meaning 4 hours of work cost $250 at BOTH companies).
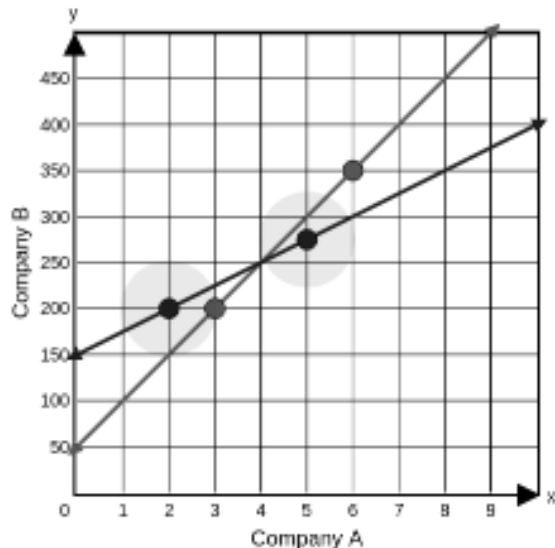
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The equation for Company B's line is $y = 50 + 50x$. The equation for Company A's line is $y = 150 + 25x$. The lines show that the cost of Company B increases faster than Company A.

The two line intersect at (4,250). The intersection shows that above 4 hours of work will cost more from Company B. 4 hours of work costs the same from both companies.
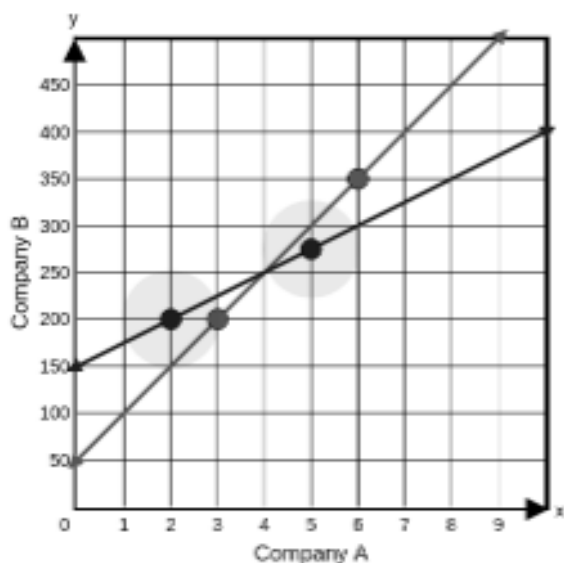
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The equations of the lines relate to the situation because for every one hour of work for Company A they charge $25 with a base price of $150, for the equation $y = 150 + 25x$, but Company B charges $50 per hour with a base price of $50, for the equation $y = 50 + 50x$. The intersection of the two lines, found at (4, 250), is when both companies would cost the same amount of money.

Part A
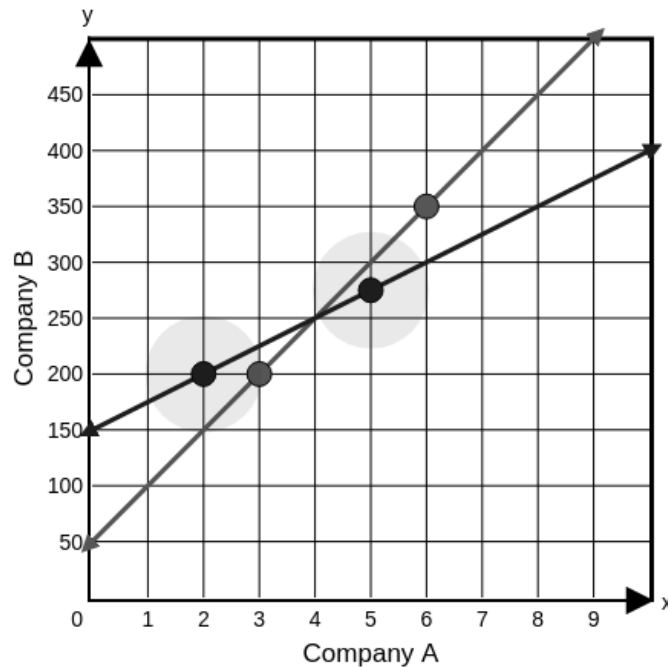
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The equations show the relationship between prices and hours worked for each company. As the hours go up, so does the price. One company just increases more than the other. The intersection of the two lines shows a common price to hour ratio. Each company charges $250 for 4 hours of work.
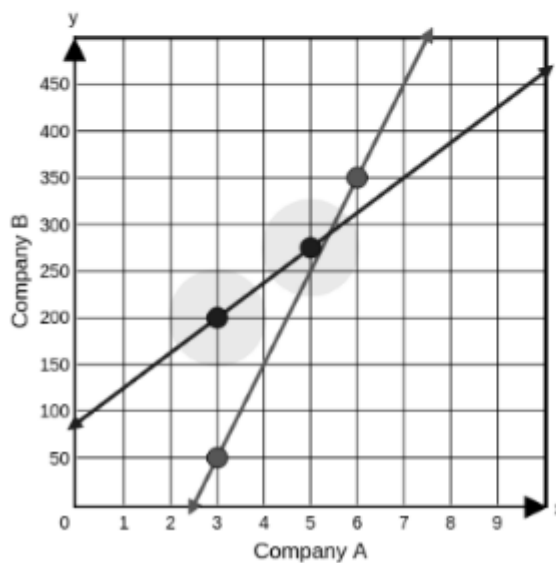
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There is a dot located on the 200 2 hour mark, 275 5 hour mark, there's a dot on the 200 3 hour mark, and 350 6 hour mark as well. Which shows the total cost of all of it, $1,025.
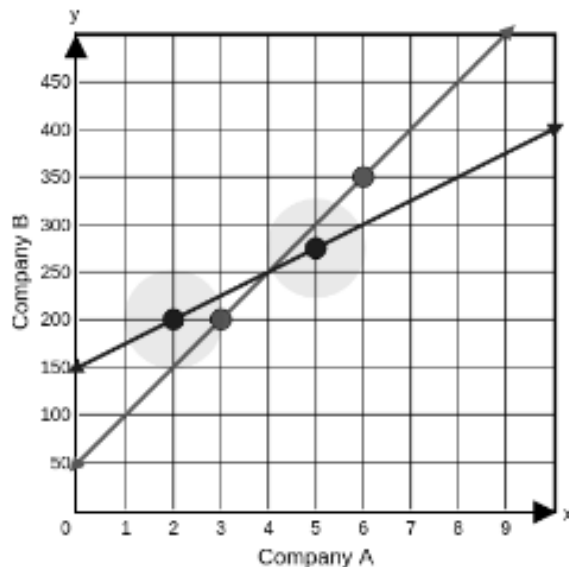
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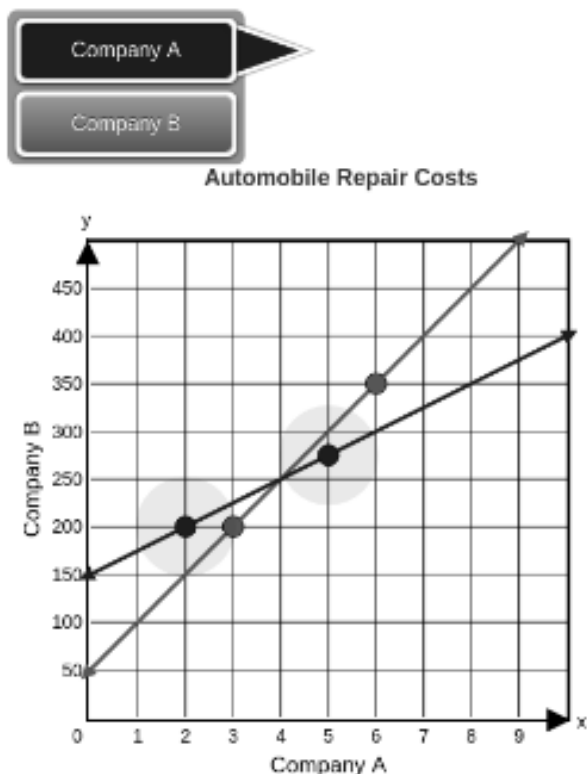
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the graph shows that company B would be cheaper until you need work that will last longer than 4 hours, then company A will be the cheaper option. The intersection shows where the companies will both charge 250 dollars for 4 hours of work, but after that company A will be cheaper and prior to that company B will be cheaper.

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Company A charges less therefore on a larger scale at any given time it is less expensive to go to Company A rather than Company B. Both companies prices go up at a steady rate so Company B will always be mor expensive. $\frac{200}{250} \cdot \frac{275}{350}$
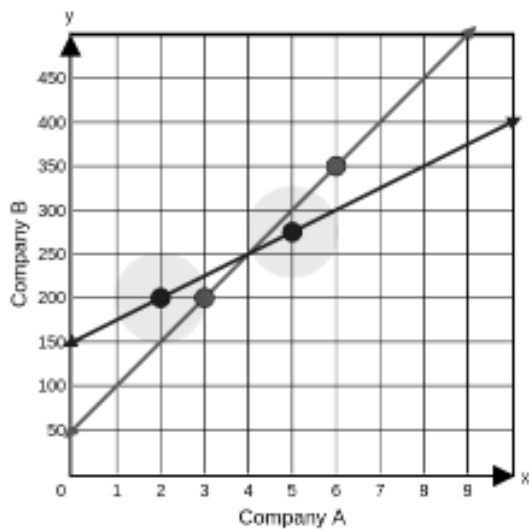
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Company A is $y = 150 + 25x$, which means they charge 150 upfront and charge 25 an hour for service.

Company B is $y = 50 + 50x$, which means they charge 50 upfront and 50 an hour.

It would cost the same the get your car fixed at the place where the lines intersect on the graph, which is (4,250), which means that the two places charge the same amount for four hours of service.
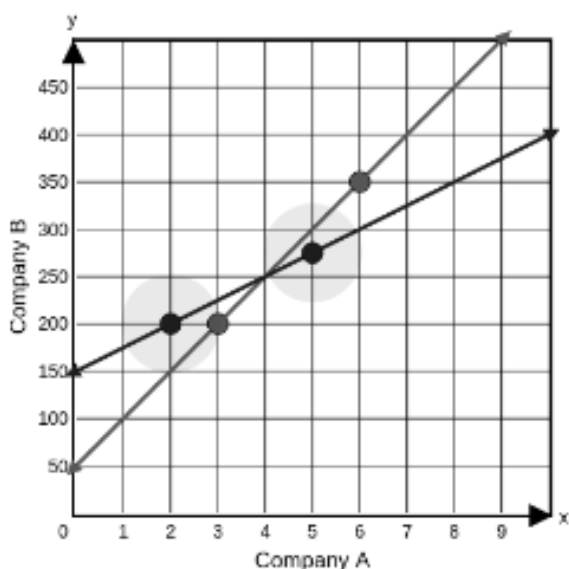
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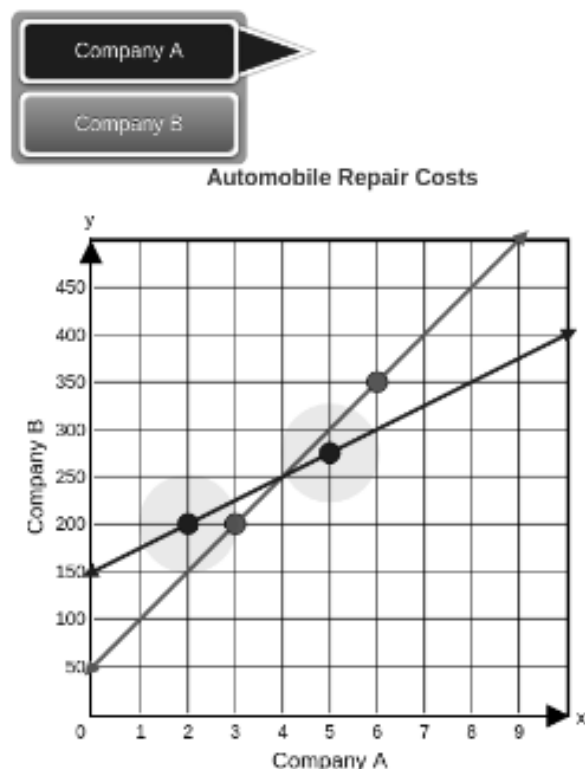
Enter your descriptions in the space provided.

The lines on the graph relates to the situation because the more hours they put in to work is more money that they have to pay. The intersection part is where if they work for 4 hours they both have the same amount of what the customer has to pay.

Part A

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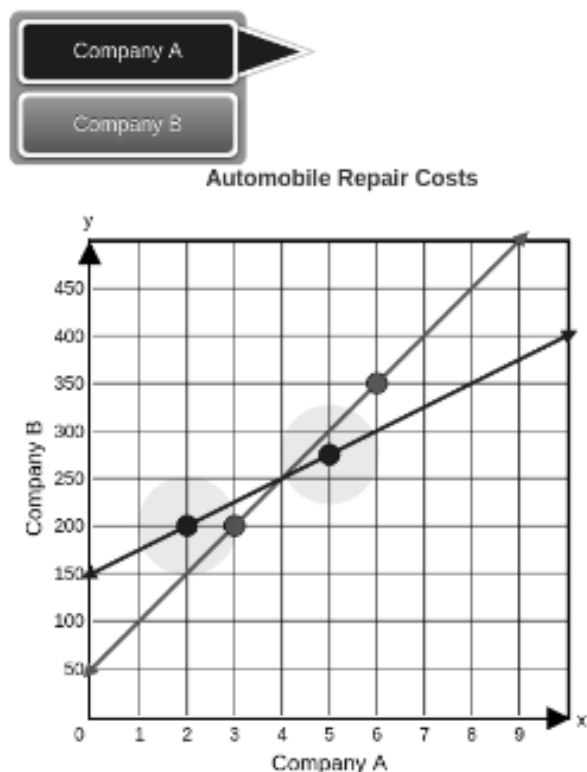
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The equations here tell us that Company B's cost of $50x + 50$ will be cheaper until four hours of work are done on the vehicle, after which point Company A's cost of $25x + 150$ will be cheaper. The intersection signifies the point where the costs are equal from both companies. Before it, Company B is cheaper, and after it Company A is cheaper.

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> The equations tell you which should be used depending on how many hours of work you want to use. The equations are $150 + 25x$ for Company A and $50 + 50x$ for Company B.
>
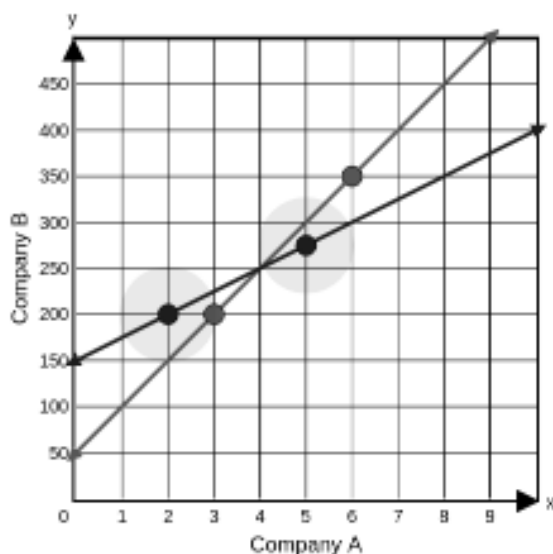> If it takes 4 hours of work either company would charge you $250.

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company A is lossing money because company B is working one more hour then company A and they are charing people to pay $200 for 2 working hours while in company B you $200 for 3 working hour and they have more time to work on a car and not be in a rush (200,2) for company A and company B (200,3) and last (275,5) and compnay B (350,6) you see the differents
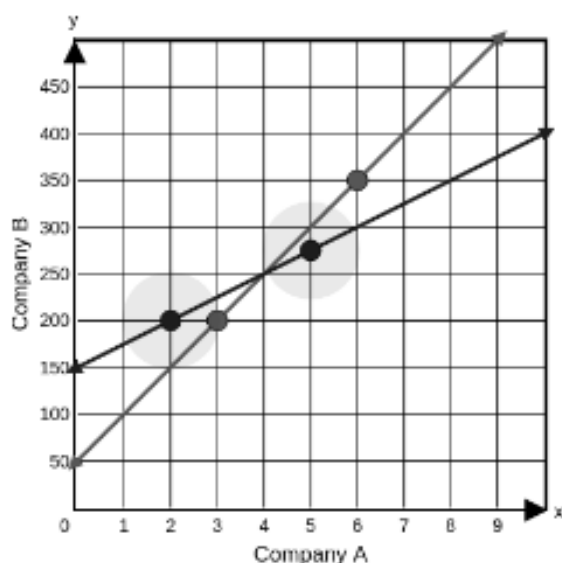
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The equation of the line shows how company A stays in the same area of cost for 2 hours or 5 hours but company B jumps a lot when the amount of hours goes up. $y = 2x + 200$ company A's equation. $y = 3x + 200$ company B's eqaution.

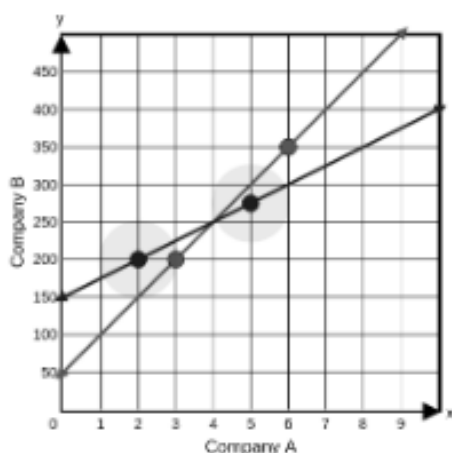Where the two lines meet it at (4,250) this means that for 4 hours both company a and b coast $250

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The equation for company A's line would be
$y = 25x + 150$

The equation for company B's line would be

$y = 50x + 50$

These equations represent the amount of money per hour spent for company A and company B. Company A starts out more expensive, however if you're going to use thier services for more than 4 hours you would end up saving money. Company B starts out less expensive, however after 4 hours you would be spend more money compared to Company A's prices. Therefore, Company B is best for shorter amounts of time and Company A is best for longer amounts of time.

These lines intersect at point (4,250) this point shows where the companies prices would be the same. So at 4 hours both companies would charge $250.
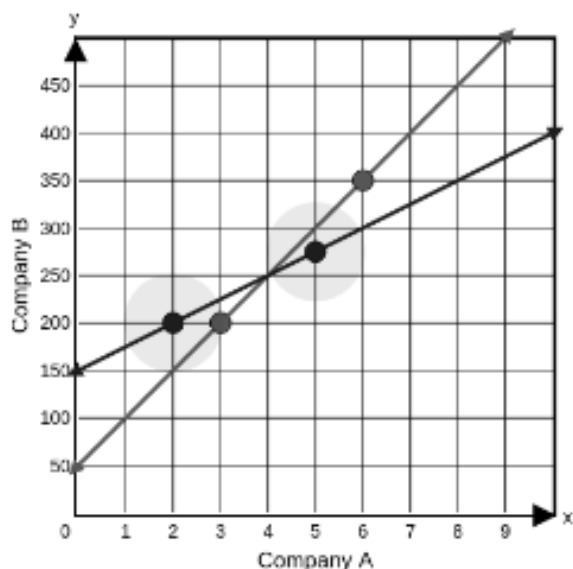
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the equations of the lines show the price per hour for each company. the equation for company a is $y = 25x + 150$ the equation for company b is $y = 50x + 50$. the intersection point is (4, 250). this point shows that company b is cheaper with less than 4 hours but company a is cheaper with more than 4 hours.
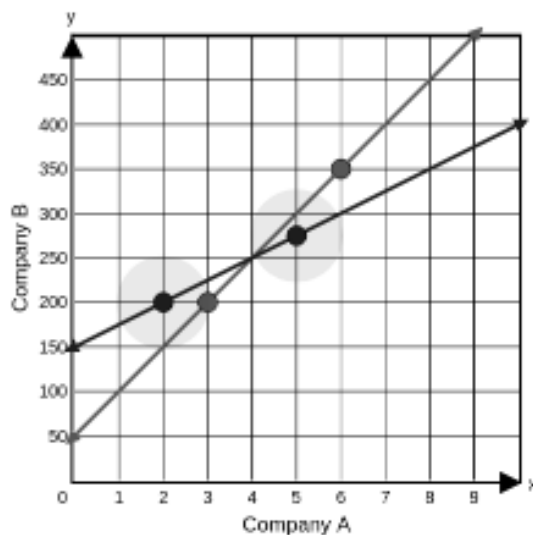
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$200x + 2 + 275x + 5$

company A

company B

$200 + 3 + 350 + 6$

The lines relate to the situation by seeing that company A increased their hours and so did company B bt you can see the greater increase with compny A.