1. Solve for $X$:
   
   \[-2X + Y = 4\]
   \[X - 2Y = -5\]

2. Two right triangles have some sides that are perpendicular to one another, as shown in the figure. Express the length $X$ in terms of length $L$ and angle $\theta$.

3. What is the derivative of $f(x) = (1 + e^{2x})^5$ with respect to $x$?

4. If $\vec{C} = \vec{A} - \vec{B}$ for the vectors shown in the diagram at the right, what is $C_x$ in terms of $\theta$ and the magnitudes of $\vec{A}$ and $\vec{B}$?
1. Solve for $X$: 
\[ -2X + Y = 5 \]
\[ X + 2Y = -5 \]

2. Two right triangles have some sides that are perpendicular to one another, as shown in the figure. Express the length $R$ in terms of length $X$ and angle $\theta$.

3. What is the derivative of $f(x) = (1 + e^{5x})^2$ with respect to $x$?

4. If $\vec{C} = \vec{A} + \vec{B}$ for the vectors shown in the diagram at the right, what is $C_x$ in terms of $\theta$ and the magnitudes of $\vec{A}$ and $\vec{B}$?
1. Solve for $A$:

$$A + 2B = 4$$

$$\frac{1}{2}A + 3B = -4$$

2. Two right triangles have some sides that are perpendicular to one another, as shown in the figure. Express the length $L$ in terms of $X$ and $\theta$.

3. What is the derivative of $y(t) = (2 + \sin(2t))^3$ with respect to $t$?

4. If $\vec{C} = \vec{A} + 2\vec{B}$ for the vectors shown in the diagram at the right, what is $C_y$ in terms of $\theta$ and the magnitudes of $\vec{A}$ and $\vec{B}$?
1. Solve for $B$:

\[ A + 2B = -4 \]
\[ \frac{1}{2}A - 3B = 4 \]

2. Two right triangles have some sides that are perpendicular to one another, as shown in the figure. Express the length $L$ in terms of $x$ and $\theta$.

\[ L = \sqrt{x^2 + (x \sin \theta)^2} \]

3. What is the derivative of $y(t) = (2 + \sin(3t))^2$ with respect to $t$?

\[ y'(t) = 2(2 + \sin(3t)) \cdot 3\cos(3t) \]

4. If $\vec{C} = \vec{A} - \vec{B}$ for the vectors shown in the diagram at the right, what is $C_y$ in terms of $\theta$ and the magnitudes of $\vec{A}$ and $\vec{B}$?

\[ C_y = A_y - B_y = A_y - B_y \sin \theta \]
1. \( X \) and \( T \) are BOTH negative numbers. Write the algebraic equation that is equivalent to the verbal statement “\( F \) has the same the value as twice \( X \) subtracted from \( T \).”

2. Two right triangles have some sides that are perpendicular to one another, as shown in the figure. Express the length \( x \) in terms of length \( L \) and angle \( \theta \).

3. What is the derivative of \( y(x) = (2 + \cos(2x))^3 \) with respect to \( x \)?

4. If \( \vec{C} = 2\vec{A} - \vec{B} \) for the vectors shown in the diagram at the right, what is \( C_y \) in terms of \( \theta \) and the magnitudes of \( \vec{A} \) and \( \vec{B} \)?
1. \( X \) and \( T \) are BOTH negative numbers. Write the algebraic equation that is equivalent to the verbal statement “\( F \) has the same the value as twice \( T \) added to \( X \).”

2. Two right triangles have some sides that are perpendicular to one another as shown in the figure. Express the length \( L \) in terms of length \( x \) and angle \( \theta \).

3. What is the derivative of \( y(x) = (2 + \cos(3x))^2 \) with respect to \( x \)?

4. If \( \vec{C} = 2\vec{A} - \vec{B} \) for the vectors shown in the diagram at the right, what is \( C_y \) in terms of \( \theta \) and the magnitudes of \( \vec{A} \) and \( \vec{B} \)?