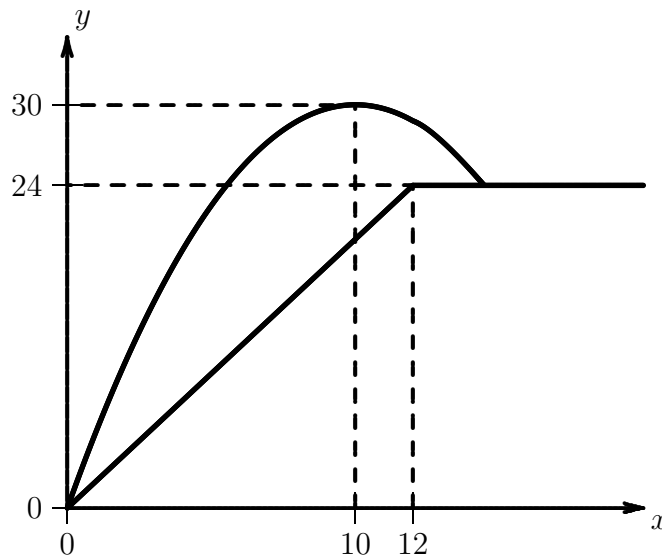


Quiz Two

		Hui	Santosh
Section	10:30	BA	BC
(circle one)	11:30	BB	BD

No notes. No calculators.

Simplify your answers. Show your work. Please put a box around YOUR FINAL ANSWER. There are 15 points on this quiz.



Pat throws a ball up the side of a hill. The path of the ball is shown as a parabola, with the highest point of the trajectory at the point $(10, 30)$ in the coordinate system shown. The hill is modeled by the two lines shown; one line is horizontal and the other passes through the origin. The two lines meet at the point $(12, 24)$. The hill and the trajectory of the ball both cross the origin of the coordinate system.

1 (4 points) Find the equation of the parabola that models the path of the ball.

2 (3 points) Find the multi-part function that models the hill. (Use a domain of $0 \leq x \leq 20$.)

3 (4 points) Find the multi-part function that models the height of the ball above the hill. (Use a domain of $0 \leq x \leq 14$. This is *before* the ball hits the hill.)

4 (4 points) Find the x coordinate where the ball has its greatest height over the hill. (You do not need to find this greatest height.)