EXAMPLE 4 **TAKS PRACTICE: Multiple Choice**

You ride an express bus from the center of town to your street. You have two payment options. Option A is to buy a monthly pass and pay $.75 per ride. Option B is to pay $2 per ride. A monthly pass costs $25. After how many rides will the total costs of the two options be the same?

(A) 10 rides (B) 20 rides (C) 24 rides (D) 28 rides

Solution

Equation 1 (Option A)

Total cost (dollars)	=	Cost per ride (dollars/ride)	·	Number of rides (rides)	+	Monthly fee (dollars)
y	=	0.75	·	x	+	25

Equation 2 (Option B)

| Total cost (dollars)	=	Cost per ride (dollars/ride)	·	Number of rides (rides)
y	=	2	·	x

To solve the system, graph the equations $y = 0.75x + 25$ and $y = 2x$, as shown at the right.

Notice that you need to graph the equations only in the first quadrant because only nonnegative values of x and y make sense in this situation.

The lines appear to intersect at the point (20, 40). You can check this algebraically as follows.

$40 = 0.75(20) + 25$ ✓ **Equation 1 checks.**
$40 = 2(20)$ ✓ **Equation 2 checks.**
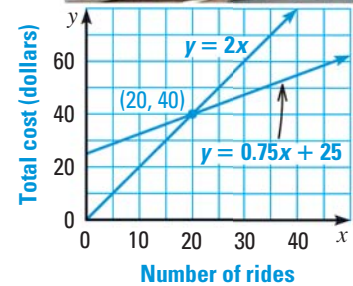
▶ The total costs are equal after 20 rides.

The correct answer is B. (A) (B) (C) (D)

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✓ **GUIDED PRACTICE** for Examples 2, 3, and 4

Solve the system. Then classify the system as *consistent and independent*, *consistent and dependent*, or *inconsistent*.

4. $2x + 5y = 6$
$4x + 10y = 12$

5. $3x - 2y = 10$
$3x - 2y = 2$

6. $-2x + y = 5$
$y = -x + 2$

7. WHAT IF? In Example 4, suppose the cost of the monthly pass is increased to $36. How does this affect the solution?