Practice Test #2 Answers

Solve each system using the given method:

① Graphing: $\begin{cases} y = 2x - 3 \\ y = -x + 9 \end{cases}$ $(4, 5)$

② Substitution: $\begin{cases} y = 3x - 1 \\ 2x + 3y = 8 \end{cases}$ $(1, 2)$

③ Elimination: $\begin{cases} 2x - 4y = 10 \\ 3x + 4y = 5 \end{cases}$ $(3, -1)$

④ Any method: $\begin{cases} 2x - 3y = 5 \\ 3x + 2y = 40 \end{cases}$ $(10, 5)$

Solve each quadratic using the given method:

⑤ Factoring: $x^2 - 6x - 16 = 0$

$(x - 8)(x + 2) = 0$

$x = 8$ or $x = -2$

⑥ Factoring: $6x^2 - 5x + 2 = 8$

$6x^2 - 5x - 6 = 0$

$(3x + 2)(2x - 3) = 0$

$x = -2/3$ or $x = 3/2$

⑦ Quadratic Formula: $2x^2 + 6x + 4 = 0$

$$x = \frac{-6 \pm \sqrt{36 - 4(2)(4)}}{2(2)} = \frac{-6 \pm \sqrt{4}}{4}$$

$$= \frac{-6 \pm 2}{4}$$

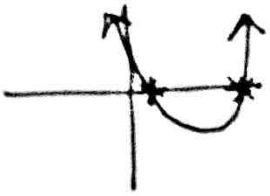
$\boxed{x = -1 \text{ or } x = -2}$

⑧ Quadratic Formula: $x^2 + 4x + 2 = 0$

$$x = \frac{-4 \pm \sqrt{16 - 4(1)(2)}}{2(1)} \qquad x = \frac{-4 \pm 2\sqrt{2}}{2}$$

$$x = \frac{-4 \pm \sqrt{8}}{2} \qquad x = \boxed{-2 \pm \sqrt{2}}$$

⑨ Graphing: $x^2 - 8x + 15 = 0$



Zeros @ $x = 3$ and $x = 5$

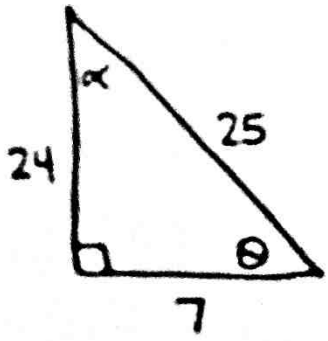
⑩ Any Method: $10x^2 + 4x + 2 = 2x^2 + 2x + 8$

$8x^2 + 2x - 6 = 0$

$4x^2 + x - 3 = 0$ $\qquad x = \frac{3}{4}$ or $x = -1$

$(4x - 3)(x + 1) = 0$

⑪ Find each ratio given the triangle below:



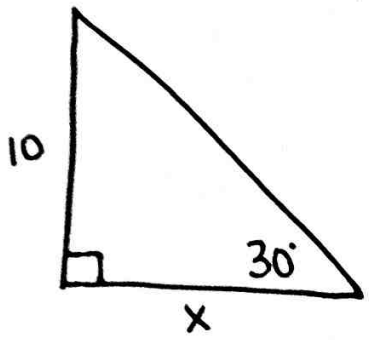
$\sin\theta = \frac{24}{25}$ $\qquad \csc\theta = \frac{25}{24}$

$\cos\theta = \frac{7}{25}$ $\qquad \sec\theta = \frac{25}{7}$

$\tan\theta = \frac{24}{7}$ $\qquad \cot\theta = \frac{7}{24}$

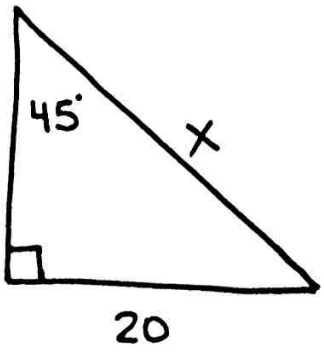
$\cos\alpha = \frac{24}{25}$ $\qquad \csc\alpha = \frac{25}{7}$ $\qquad \tan\alpha = \frac{7}{24}$

(12) Solve for x:



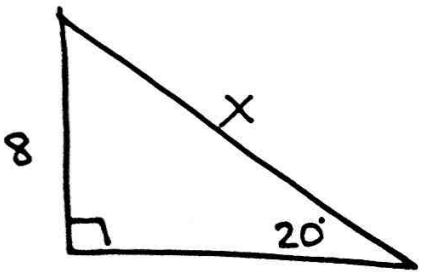
$\tan 30^\circ = \frac{10}{x}$

(13) Solve for x:



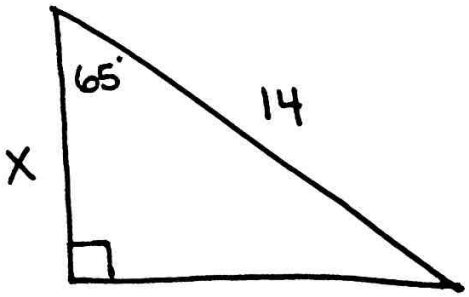
$\sin 45^\circ = \frac{20}{x}$

(14)



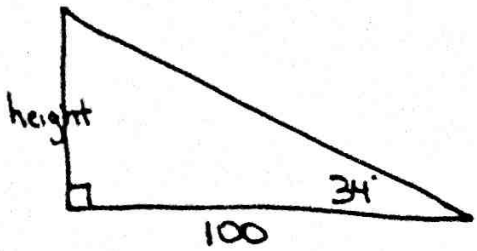
$\sin 20^\circ = \frac{8}{x}$

(15)



$\cos 65^\circ = \frac{x}{14}$

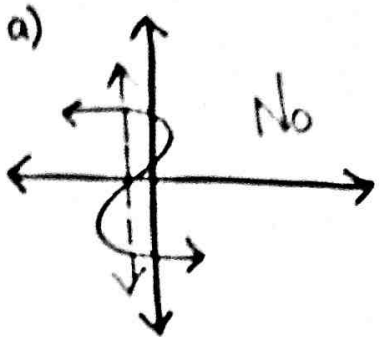
(16) If you are looking up at a building 100 feet away and you are looking up at a 34° angle, then how tall is the building?



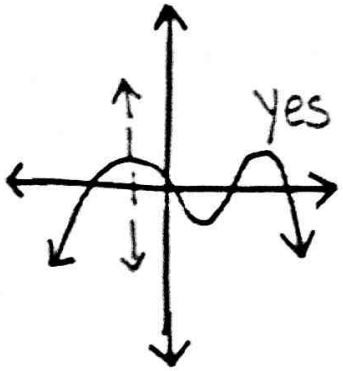
$\tan 34^\circ = \frac{\text{height}}{100}$

(17) State which graphs are functions:

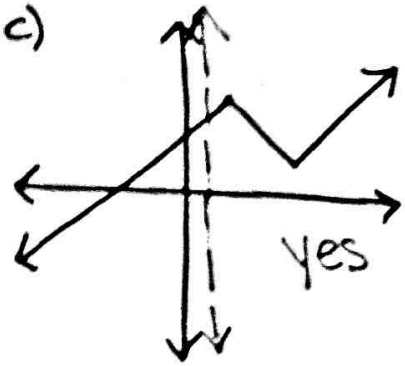
a)



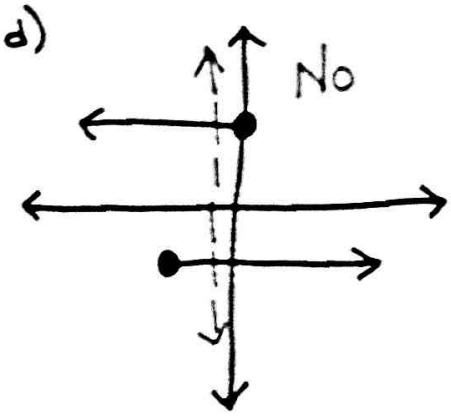
b)



c)



d)



e)

X	Y
1	8
2	-1
3	-1
4	2
5	-8

Yes

f)

X	Y
1	4
2	1
3	3
3	5
4	8

No!