

Quadratics & Radicals

4. (D) $4x^2 - 8x + 7 \rightarrow$ is the y-intercept, so look at the y-intercept for each graph.

A = 4

B = no y-intercept

C = 10

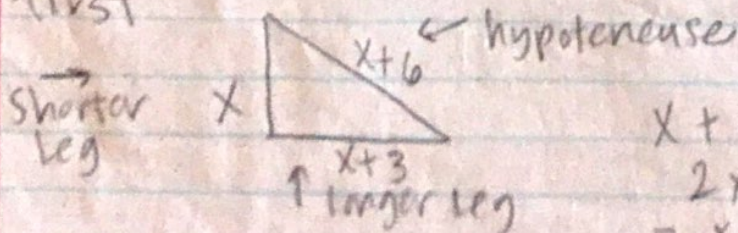
✓ D = 7

9. (6) The question asks how long before the object hits the ground, which is 0 ft. Make a table and solve and when it equals zero (ground), that's the time/seconds it takes.

Time	$-5t^2 + 20t + 60$	Height
0	$-5(0^2) + 20(0) + 60$	60
1	$-5(1^2) + 20(1) + 60$	75
2	$-5(2^2) + 20(2) + 60$	80
3	$-5(3^2) + 20(3) + 60$	75
4	$-5(4^2) + 20(4) + 60$	60
5	$-5(5^2) + 20(5) + 60$	35
(6)	$-5(6^2) + 20(6) + 60$	0 ✓

\hookrightarrow this is the ground.

12. (9) - The question is dealing with a right triangle, so you'll use $a^2 + b^2 = c^2$, but draw it out first



$$x + x + 3 = x + 6$$

$$2x + 3 = x + 6$$

$$\begin{array}{r} -x \quad -x \\ \hline x + 3 = 6 \end{array}$$

$$\begin{array}{r} -3 \quad -3 \\ \hline x = 3 \end{array}$$

$$\begin{array}{r} a^2 + b^2 = c^2 \\ 3^2 = 9 \end{array} \quad \checkmark$$

34. (C) The question deals with midpoints (this is a formula you need to memorize!)

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

- You are given coordinates for P as well as S and are asked to find Q, but you first need to find R.

$$P(8, 10) \text{ and } S(12, -6)$$

$x_1 \quad y_1 \qquad \qquad \qquad x_2 \quad y_2$

$$\frac{8 + 12}{2}, \frac{10 + -6}{2}$$

$\downarrow \qquad \qquad \qquad \downarrow$

$$\frac{20}{2} = 10 \quad \frac{4}{2} = 2 \quad (10, 2) = R$$

Now, use the points for R and S to find the midpoint, Q

$$R(10, 2) \quad S(12, -6)$$

$x_1 \quad y_1 \qquad \qquad \qquad x_2 \quad y_2$

$$\frac{10 + 12}{2} \quad \frac{2 + -6}{2}$$

$\downarrow \qquad \qquad \qquad \downarrow$

$$\frac{22}{2} = 11 \quad \frac{-4}{2} = -2$$

$$(11, -2) = Q$$