

DO NOW:

3APR

- 1.) take a seat where you think you will learn best
- 2.) copy and solve problems below
- 3.) have HW out
- 4.) Don't judge, you never know what battles someone is going through

Without solving them, say whether the equations in Problems 61–68 have two solutions, one solution, or no solution. Give a reason for your answer.

61. $3(x - 3)(x + 2) = 0$

62. $(x - 2)(x - 2) = 0$

63. $(x + 5)(x + 5) = -10$

64. $(x + 2)^2 = 17$

65. $(x - 3)^2 = 0$

66. $3(x + 2)^2 + 5 = 1$

67. $-2(x - 1)^2 + 7 = 5$

68. $2(x - 3)^2 + 10 = 10$

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61. $3(x - 3)(x + 2) = 0$

62. $(x - 2)(x - 2) = 0$

63. $(x + 5)(x + 5) = -10$
 (2)
 no solution

64. $(x + 2)^2 = 17$
 (1)

65. $(x - 3)^2 = 0$
 (1)

66. $3(x + 2)^2 + 5 = 1$
 (2)
 NO SOLUTION

67. $-2(x - 1)^2 + 7 = 5$
 (2)

68. $2(x - 3)^2 + 10 = 10$
 (1)



SIWS core concepts:

$P = 3v - 10$ & $C = 16 - v$
 solve for P in terms of C

equivalent expressions, substitute and combine expressions, and solve quadratic equations

→ 5 methods, $b^2 - 4ac$...

→ $10 - 3(4 - x) = ?$

$$4\sqrt{\frac{5}{12}} \quad \sqrt{a}\sqrt{b} = \sqrt{ab}$$

$$\frac{4\sqrt{5}}{\sqrt{12}} = \frac{4\sqrt{5}}{\sqrt{4}\sqrt{3}} = \frac{4\sqrt{5}}{2\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$\frac{4\sqrt{15}}{2 \cdot 3} = \frac{4\sqrt{15}}{6} = \frac{2\sqrt{15}}{3}$$

Equivalent to?

$$10 - 2(4c - 3) =$$

simplify.

5 ways to solve a quadratic equation

- 1.) quadratic formula
- 2.) factoring
- 3.) square root
- 4.) completing the square
- 5.) graphing

Which is NOT a
perfect trinomial

$$(a+b)^2 = a^2 + 2ab + b^2$$

a.) $x^2 + 4x + 4$ b.) $x^2 - 3x + 9$

c.) $x^2 + 8x + 16$ d.) $x^2 - 4x + 4$

e.) none of these

Which is a perfect trinomial.

- a.) $x^2 + 8x + 4$ c.) $(x+4)(x+4)$
b.) $(x+3)(2x+3)$ d.) $(x-3)(x+3)$
e.) none of these

Give $y = x^2 + 7x + 12$

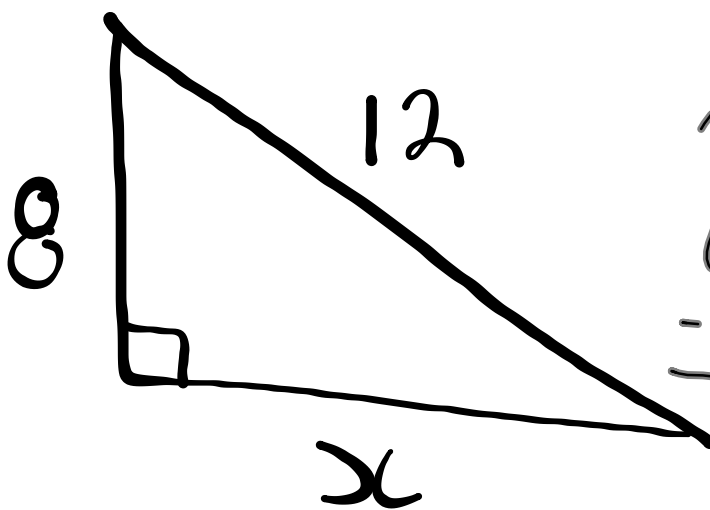
I.O.S. = $-\frac{b}{2a}$

vertex =

y-int =

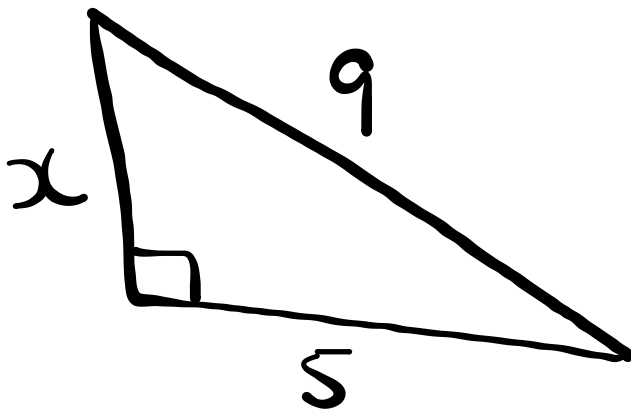
x-int =

U or \cap



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 (8)^2 + x^2 &= (12)^2 \\
 64 + x^2 &= 144 \\
 -64 \quad -64 & \\
 \hline
 x^2 &= 80 \\
 \sqrt{x^2} &= \sqrt{80} \\
 x &= 4\sqrt{5}
 \end{aligned}$$

Find missing side.



$$a^2 + b^2 = c^2$$

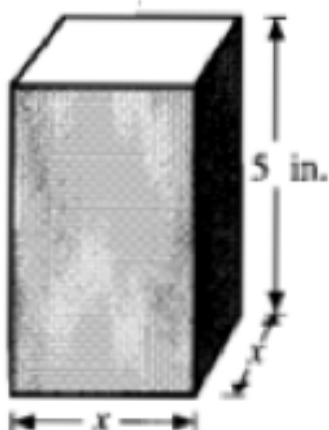
$$a^2 + 5^2 = 9^2$$

$$a^2 = 81 - 25$$

$$a^2 = 56 \quad a \approx 7.48$$

$$a \approx 7.48$$

25. **Surface Area** The surface area of a rectangular box with a square base is 112 square inches. The surface area is given by $A = 2x^2 + 4xh$. Find x .



$$112 = 2x^2 + 4xh$$

$$112 = 2x^2 + 20x$$

$$\Rightarrow 0 = 2x^2 + 20x - 112$$

$$x = \frac{-20 \pm \sqrt{(20)^2 - 4(2)(-112)}}{2(2)}$$

$$x = \frac{-20 \pm \sqrt{400 + 896}}{4}$$

$$x = \frac{-20 \pm \sqrt{1296}}{4}$$

$$x = \frac{-20 \pm 36}{4}$$

$$x = \frac{-20 + 36}{4} = \frac{16}{4} = 4$$

$$x = \frac{-20 - 36}{4} = \frac{-56}{4} = -14$$

Since x represents a length, it must be positive. Therefore, $x = 4$.

Given $P = 3v - 10$ & $C = 5 - v$

Write P in terms of C

$$\begin{array}{r} C = 5 - v \\ +v \quad +v \\ \hline C + v = 5 \\ -C \quad -C \\ \hline v = 5 - C \end{array}$$

$$\begin{aligned} P &= 3v - 10 \\ P &= 3(5 - C) - 10 \\ P &= 15 - 3C - 10 \\ P &= 5 - 3C \end{aligned}$$

Given $P = 3v - 10$ & $C = 8 + v$

Write P in terms of C

$$y = ax^2 + bx + c$$

$$y = 3x^2 \dots \cup$$

$$y = -\frac{1}{2}x^2 \dots \cap$$