

Answer the questions as shown.

Solve for X.

1) $-6x - 4 = 20$ 2) $-8x + 6 = 22$ 3) $4 = 7 - 3(4x + 1)$ 4) $-5(x - 4) + 2 = 11 - (x - 3)$

5) $\frac{1}{4}x - \frac{3}{2} = 2$ 6) $\frac{x-1}{5} + \frac{x}{4} = \frac{x+3}{2} + 1$ 7) $\frac{6}{x^2+8x+15} - \frac{2}{x+3} = \frac{-4}{x+5}$

8) How much 4% acid solution should be mixed with 200 ml of a 12% acid solution to make a 9% acid solution?

9) Lorraine borrowed \$10000. Part of the money was from a bank that charged 5.5% simple interest. The rest of the money was from a friend who charged 2.5% simple interest. Lorraine paid the bank back after 2 years and the friend back after 9 months. If her total interest paid was \$735, how much did she borrow from each source?

10) Darrell drove 240 miles. He drove 1 hour in city traffic and 3 hours on the highway. If his average highway speed was 20 mph faster than his average city speed, what were both average speeds?

Write in terms of i.

Simplify.

11) $\sqrt{-81}$ 12) $\sqrt{-50}$ 13) $\sqrt{-11}$ 14) $\sqrt{-16} \cdot \sqrt{-49}$ 15) $\sqrt{-10} \cdot \sqrt{-2}$ 16) $\frac{\sqrt{-48}}{\sqrt{-3}}$ 17) $3i - 2(4 - 8i)$

18) $(2 - 3i)(4 + 5i)$ 19) $(2 - 3i)^2$ 20) $\frac{8 - 5i}{13 + 2i}$ 21) $(2 - 7i) + (8 - 3i)$ 22) $\frac{5}{9i}$

Solve for X.

23) $x^2 = 49$ 24) $x^2 + 3x = 0$ 25) $2x(2x - 7) = -12$ 26) $(x + 3)^2 = 16$ 27) $x^2 - 3 = 10x$

28) $x^2 - 6x + 8 = 0$ 29) $x^2 - 6x - 3 = 0$ 30) $x^2 + 12x + 36 = 0$ 31) $x^2 + 4x + 5 = 0$

32) A right triangle has a hypotenuse of 10 inches. If one leg is 2 inches longer than the other leg, find the two leg lengths.

33) A rocket is launched upward. If the height of the rocket in feet after t seconds is given by $h(t) = -16t^2 + 48t + 20$, find when the rocket is 35 feet off the ground.

Solve for X.

34) $25x^3 + 100x^2 - x - 4 = 0$ 35) $x^4 = 27x$ 36) $\frac{3x}{x-5} = \frac{2}{x+1} + \frac{2x^2+40}{x^2-4x-5}$

37) $5|2 - 4x| = 50$ 38) $|6x - 7| + 9 = 5$ 39) $|3x - 4| = |2x + 1|$

40) $\sqrt{x+7} = x-5$ 41) $\sqrt{x+4} = \sqrt{3x+1} - 1$ 42) $(x^2 - 6)^2 + 33(x^2 - 6) + 62 = 0$

