Ben bought 5 smarties and 3 jujubes for 34 cents. Later that day, Zack went into the same store and bought 5 smarties and 8 jujubes and it cost him 49 cents. How much do each smartie and jujube cost?

Zack $\quad 5s + 8j = 49$

Ben $\quad -5s + 3j = 34$

$\cancel{0}s \quad 5j = \dfrac{15}{5}$

$\dfrac{5j}{5}$

$\boxed{j = 3}$

then, if

$5s + 3j = 34$

$5s + 3(3) = 34$

$5s + 9 = 34 - 9$

$\dfrac{5s}{5} = \dfrac{25}{5}$

$s = 5$

but we know

$\boxed{j = 3}$

∴ smarties are 5 cents and jujubes are 3 cents

What have you done to solve for the number
of each candy?

Create equations.
Subtract the equations.
(because they bought the
same # of smarties)

Solve the following systems using Elimination

$5x - y = 15$
$x + y - 3 = 0$

$5x - y = 15$
$+\ x + y = 3$
_____
$6x + \cancel{0y} = 18$
$\dfrac{6x}{6} \qquad \dfrac{18}{6}$

$\boxed{x = 3}$

$5(3) - y = 15$
$15 - y = 15 \quad -15$
$-y = 0$
$y = 0$

STEPS

① Line up equations
  $\_x + \_y = \#$
  $\_x - \_y = \#$

② Add/Subtract the two equations

③ Solve

④ Sub. your answer into ANY equation

⑤ Solve.

Solve using Elimination

① $(2x + 3y = 6) \times 3$

② $(3x - 2y = 10) \times 2$

① $6x + 9y = 18$

② $-(6x - 4y = 20)$

$\cancel{0}x + 13y = -2$

$\dfrac{13}{13} \qquad \dfrac{-2}{13}$

$\boxed{y = \dfrac{-2}{13}}$

$2x + 3\left(\dfrac{-2}{13}\right) = 6$

$2x - \dfrac{6}{13} = 6$

$2x = \dfrac{78}{13} + \dfrac{6}{13}$

$\dfrac{2x}{2} = \dfrac{\frac{84}{13}}{2}$

$x = \dfrac{42}{13}$

STEPS

1. Make the coefficients of of one variable equal
   (by multiplying equation)

2. Add or subtract the two equations

3. SOLVE

4. Substitute your answer into ① or ②

5. SOLVE

$\therefore (x, y)$

$= \left(\dfrac{42}{13}, \dfrac{-2}{13}\right)$

$= (3.23, -0.15)$

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