5. The student council raised $\frac{2}{5}$ of the money they need to cover the cost of the school dance with a bake sale. They raised an additional $150 selling raffle tickets. If the student council has raised $630, what is the cost of the dance? Write an equation for the problem. Then solve the equation.

$\frac{k}{3} + 4 = -16$

$-4 \quad -4$

$\frac{k}{3} = -20 \cdot 3$

$k = -60$

$\frac{k}{3} \cdot 3 + 4 \cdot 3 = -16 \cdot 3$

$k + 12 = -48$

$-12 \quad -12$

$k = -60$

$\frac{22 - w}{3} = -7 \cdot 3$

$22 - w = -21$

$-22 \quad -22$

$-w = -43$

$w = 43$

Solving Equations with Letters as Coefficients

Ex: Solve $ax + 7 = 5$ for x. Assume that $a \neq 0$.

$ax + 7 = 5$

$-7 \quad -7$

$\frac{ax}{a} = \frac{-2}{a}$

$x = \frac{-2}{a}$

6. Solve $\frac{1}{a}x - 4 = 9$ for x. Assume that $a \neq 0$.

$\frac{1}{a}x - 4 = 9$

$+4 \quad +4$

$a \cdot \frac{1}{a}x = 13 \cdot a$

$x = 13a$

Same ↳ $\frac{x}{a} - 4 = 9$

* $ax - 5 = 19$

$+5 \quad +5$

$\frac{ax}{a} = \frac{24}{a}$

$x = \frac{24}{a}$

* $5 = \frac{5}{ax} + 1$

$-1 \quad -1$

$ax \cdot 4 = \frac{5}{ax} \cdot ax$

$\frac{4ax}{4a} = \frac{5}{4a}$

$x = \frac{5}{4a}$

* $\frac{8}{ax} - 5 = -3$

$+5 \quad +5$

$ax \cdot \frac{8}{ax} = 2 \cdot ax$

$\frac{8}{2a} = \frac{2ax}{2a}$

$\frac{8}{2a} = x \rightarrow x = \frac{4}{a}$

* $-7 = -16 - ax$

$+16 \quad +16$

$\frac{9}{-a} = \frac{-ax}{-a}$

$\frac{-9}{a} = x$

Your turn

$0 = 10y - 40$

$\frac{p}{-7} - 0.5 = 1.3$

$5x + 16 = 51$

$14n - 8 = 34$

$8 + \frac{3n}{12} = 13$

$\frac{3j - (-4)}{-6} = 12$

If 2x - 6 = 22, then what does 5x - 6 equal?

+6

$2x = 28$

$\frac{2x}{2} = \frac{28}{2}$

$x = 14$

$5(14) - 6$

$70 - 6$

64

Answer

331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?

$x \rightarrow$ Kids on buses

$6x + 7 = 331$

Aliyah had $24 to spend on seven pencils. After buying them she had $10. How much did each pencil cost?

$p \rightarrow$ \$ per pencil

$7p + 10 = 24$

$24 - 7p = 10$