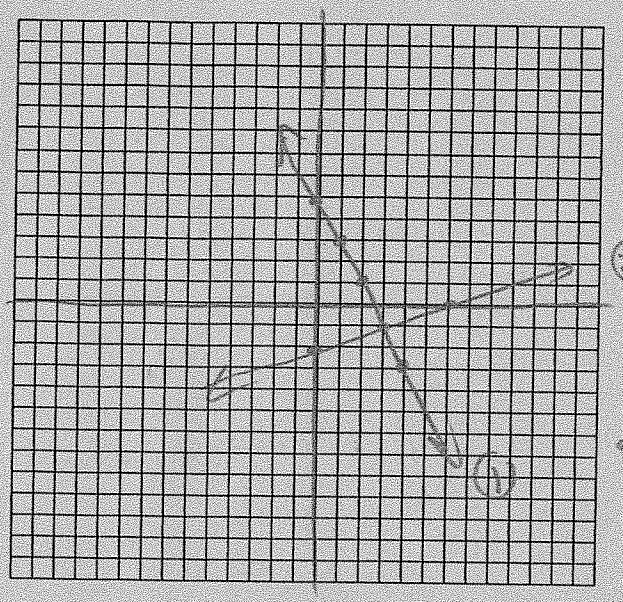
Practice TEST

1. Solve the linear system by graphing.

$y = -2x + 5$

$y = \frac{1}{3}x - 2$



∴ POI (3, -1)

2. Solve the linear system by elimination.

$x + y = 2$ (3)

$-3x + 2y = -1$

$3x + 3y = 6$

$-3x + 2y = -1$

$5y = 5$

$y = 1$

$x + y = 2$ (-2)

$-3x + 2y = -1$

$-2x - 2y = -4$

$-3x + 2y = -1$

$-5x = -5$

$x = 1$

∴ POI (1, 1)

3. Solve the linear system by substitution.

$x + 3y = 0$

$-2x + y = 7$

Isolate x in (1)

$x = -3y$

Sub in (2)

$-2(-3y) + y = 7$

$6y + y = 7$

$7y = 7$

$y = 1$

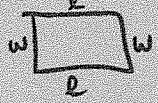
∴ POI (-3, 1)

Sub in (1)

$x + 3(1) = 0$

$x = -3$

4. A rectangle has length 1.5 times the width, and perimeter 12 cm. What are the dimensions of the rectangle?



$12 = 2l + 2w$ (1)

$l = 1.5w$ (2)

l already isolated in (2)

Sub in (1)

$12 = 2(1.5w) + 2w$

$12 = 3w + 2w$

$12 = 5w$

$2.4 = w$

Sub in (2)

$l = 1.5(2.4)$

$l = 3.6$

∴ dimensions are 2.4 cm by 3.6 cm

5. Admission to the circus costs \$8 for adults and \$6 for children. A total of 900 tickets are sold and total sales are \$6160.

a) Write a system of linear equations to represent the situation.

b) How many children attended the circus?

(a) let A be # of adults
let C be # of children

$900 = A + C$ (·−6 ·−6 ·−6)
$6160 = 8A + 6C$

(b)

$-5400 = -6A - 6C$
$6160 = 8A + 6C$

$760 = 2A$
$380 = A$

$900 = A + C$ (·−8 ·−8 ·−8)
$6160 = 8A + 6C$

$-7200 = -8A - 8C$
$6160 = 8A + 6C$

$-1040 = -2A$
$520 = A$

∴ 380 children attended.

6. The student council wants to hire a DJ for the school dance. Rappin' Ron charges \$160 plus \$35 per hour. The Pips charge \$180 plus \$30 per hour.

a) Write a system of linear equations to represent the situation.

b) How many hours must be played for the costs to be the same for both DJs?

c) Who should the student council hire for the party? Explain why.

(a) let h be # of hours
let C be cost

$C = 160 + 35h$ (1)
$C = 180 + 30h$ (2)

(b) C already isolated in (1)
sub in (2)

$160 + 35h = 180 + 30h$
$35h - 30h = 180 - 160$
$5h = 20$
$h = 4$

sub in (1)
$C = 160 + 35(4)$
$C = 160 + 140$
$C = 300$

∴ for 4 hrs both cost \$300

(c) It depends if the party will last long - hire the pips, if less than 4 hrs hire Rappin Ron