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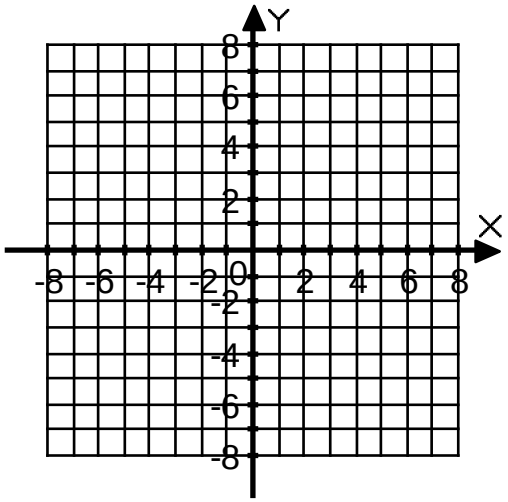
NAME _____ DATE _____

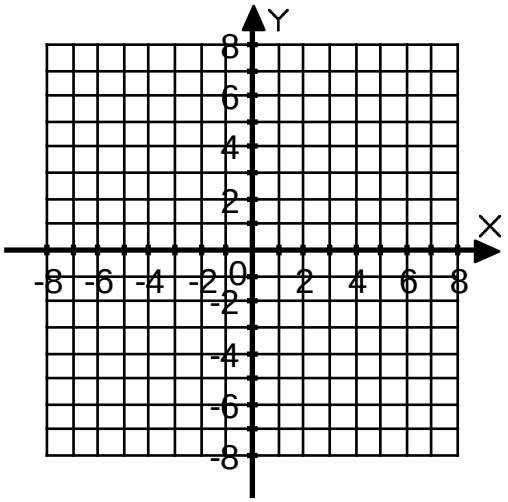
SOLVE A SYSTEM: Worksheet 2

Solve each system by graphing.

1) $y = x + 2$
$y = -2x + 2$



2) $y = \frac{1}{2}x + 1$
$y = -3x + 8$



Solve each system by elimination.

3) $3x + 4y = 12$
$2x + 4y = 8$

4) $y = \frac{1}{2}x + 2$
$y = -x + 5$

5) $y = -2x + 1$
$y = -2x - 3$

6) $2x + 5y = -22$
$10x + 3y = 22$

7) $9x + 5y = 34$
$8x - 2y = -2$

8) $x - 8y = 18$
$16y = 16x - 8$

9) Brad made 14 baskets during his game. Some of these baskets were worth 2 points and others were worth 3 points. Brad had a total of 30 points. Write and solve a system to find how many 2 point baskets he made.

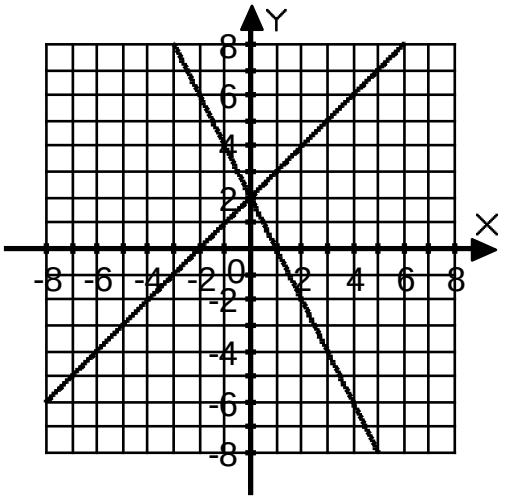
10) Eight times a number plus five times another number is -13. The sum of the numbers is 1. What are the numbers?

KEY
SOLVE A SYSTEM: Worksheet 2

Solve each system by graphing.

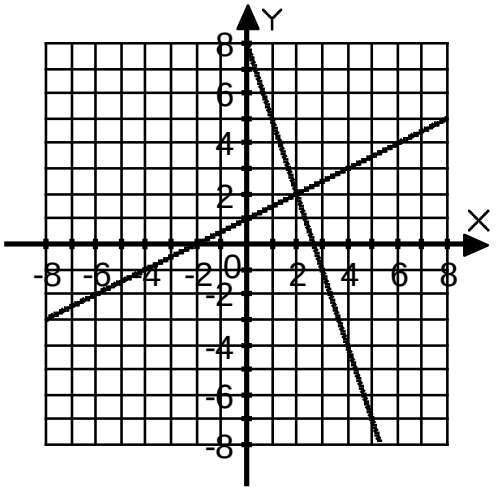
1) $y = x + 2$
$y = -2x + 2$

Solution : (0,2)



2) $y = \frac{1}{2}x + 1$
$y = -3x + 8$

Solution : (2,2)



Solve each system by elimination.

3) $3x + 4y = 12$
(-) $2x + 4y = 8$

$x = 4$
$y = 0$

Solution : (4,0)

4) $y = \frac{1}{2}x + 2$
(-) $y = -x + 5$

$0 = 1.5x - 3$
$3 = 1.5x$
$x = 2$
$y = 3$

Solution : (2,3)

5) $y = -2x + 1$
(-) $y = -2x - 3$

$0 \neq 4$ *Solution* : ϕ

6) $2x + 5y = -22$
$10x + 3y = 22$

$3[2x + 5y = -22]$
$5[10x + 3y = 22]$

$6x + 15y = -66$
(-) $50x + 15y = 110$

$-44x = -176$
$x = 4$
$y = -6$ *Solution* : $(4,-6)$

7) $9x + 5y = 34$
$8x - 2y = -2$

$2[9x + 5y = 34]$
$5[8x - 2y = -2]$

$18x + 10y = 68$
(+) $40x - 10y = -10$

$58x = 58$
$x = 1$
$y = 5$ *Solution* : $(1,5)$

8) $x - 8y = 18$
$16y = 16x - 8$

$x - 8y = 18$
$-16x + 16y = -8$

$2[x - 8y = 18]$
$-16x + 16y = -8$

$2x - 16y = 36$
(+) $-16x + 16y = -8$

$-14x = 28$
$x = -2$
$y = -2.5$ *Solution* : $(-2,-2.5)$

9) Brad made 14 baskets during his game. Some of these baskets were worth 2 points and others were worth 3 points. Brad had a total of 30 points. Write and solve a system to find how many 2 point baskets he made.

x = number of 3 point shots made
y = number of 2 point shots made

$3x + 2y = 30$
$x + y = 14$

$3x + 2y = 30$
$2[x + y = 14]$

$3x + 2y = 30$
(-) $2x + 2y = 28$

$x = 2$
$y = 12$ *Solution* : $(2,12)$

10) Eight times a number plus five times another number is -13. The sum of the numbers is 1. What are the numbers?

x = 1st number
y = 2nd number

$8x + 5y = -13$
$x + y = 1$

$8x + 5y = -13$
$5[x + y = 1]$

$8x + 5y = -13$
(-) $5x + 5y = 5$

$3x = -18$
$x = -6$
$y = 7$ *Solution* : $(-6,7)$