

Algebra 2 Honors

WS: Summer Work Extra Practice

Name Key

Date _____ Block _____

In 1 - 2, write the slope-intercept form of the equation of the line through the given points.

1. $(3, -5), (0, 4)$

$m = \frac{4 - (-5)}{0 - 3} = \frac{9}{-3} = -3$

$y = -3x + b$ $b = 4$

$y = -3x + 4$

2. $f(2) = -9, f(0) = 5$

$(2, -9) (0, 5)$

$m = \frac{5 - (-9)}{0 - 2} = \frac{14}{-2} = -7$

$y = -7x + b$ $b = 5$

$y = -x - 1$

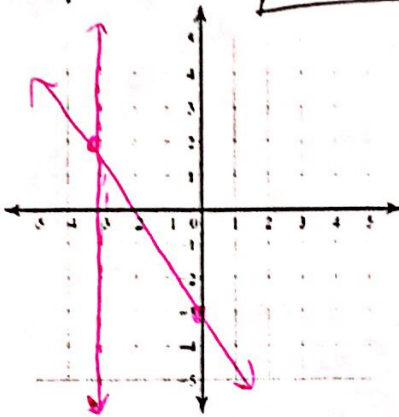
4. $y = -\frac{1}{4}x + 2$

$(-4, 3)$

In 3 - 4, solve each system by graphing.

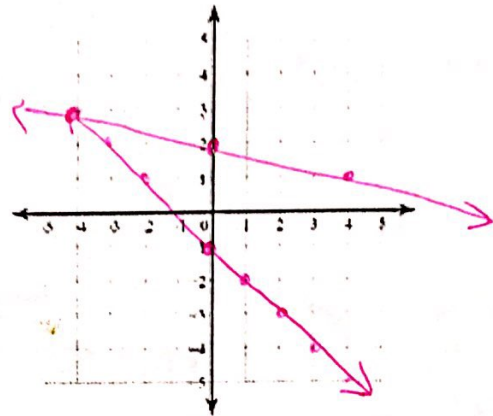
3. $3y + 9 = -5x \rightarrow y = -\frac{5}{3}x - 3$
 $x = -3$

$(-3, 2)$



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

$(-4, 3)$



In 5 - 7, solve each system using substitution or elimination.

5. $\frac{1}{2}y = x$ $y = 2x$
 $3x - 6y = 9$

$3x - 6(2x) = 9$ $y = 2(-1)$
 $y = -2$

$3x - 12x = 9$
 $-9x = 9$

$x = -1$

$(-1, -2)$

6. $4 - 2y = x$
 $x + 9y = 11$

$(4 - 2y) + 9y = 11$

$4 + 7y = 11$
 $7y = 7$
 $y = 1$

$(2, 1)$

$4 - 2(1) = x$
 $4 - 2 = x$
 $2 = x$

7. $-10x - 2y = -1$
 $y = -5x + 2$

$-10x - 2(-5x + 2) = -1$
 $-10x + 10x + 4 = -1$

$-4 = -1$

No solution

In 8 - 12, simplify completely. Your answer should contain only positive exponents.

8. $\frac{mn^{-3}}{4m^{-1}n^2}$

$\frac{m^2}{4n^5}$

$\frac{1}{4} \cdot \frac{m^1}{m^{-1}} \cdot \frac{n^{-3}}{n^2} = \frac{m^2}{4n^5}$

9. $-3b^4 \cdot -3a^{-1}b^{-4}$

$9a^{-1}b^0 = \frac{9}{a}$

10. $\frac{r(-2r)^3}{(-r)^3}$

$\frac{r(-8r^3)}{-r^3} = -8r$

11. $(-5x^7y^2z)^3(4xy^0z^9)^2$

$(-125x^{21}y^6z^3)(16x^2y^0z^{18})$

$-2,000x^{23}y^6z^{21}$

12. $(-4a^3b^3)^{-4}$

$\frac{1}{256a^{12}b^{12}}$

In 13 – 14, find the product of each expression.

13. $(7n-7)(-6n+5)$

$-42n^2 + 35n + 42n - 35$

$-42n^2 + 77n - 35$

14. $(8x+6)(2x^2-3x+5)$

$16x^3 - 24x^2 + 40x + 12x^2 - 18x + 30$

$16x^3 - 12x^2 + 22x + 30$

In 15 – 18, factor completely.

15. $m^2 + 2m - 15$

$(m+5)(m-3)$

16. $2x^2 + 17x + 35$

$(2x+7)(x+5)$

	$2x$	7
x	$2x^2$	$7x$
5	$10x$	35

17. $9x^2 - 1$

$(3x+1)(3x-1)$

18. $24x^4 + 28x^3 - 96x^2$

~~$4x^2$~~

$4x^2(6x^2 + 7x - 24)$

$4x^2(3x+8)(2x-3)$

	$3x$	8
$2x$	$6x^2$	$16x$
-3	$-9x$	-24

In 19 – 20, solve by factoring.

19. $7m^2 + 45m + 22 = 4$

$7m^2 + 45m + 18 = 0$

$7m$	3
$7m^2$	$3m$
$42m$	18

$(7m+3)(m+6) = 0$

$7m+3=0$

$m = -3/7$

$m+6=0$

$m = -6$

20. $-b^2 - 18b - 8 = -3b^2 - 3b$

$2b^2 - 15b - 8 = 0$

	b	-8
$2b$	$2b^2$	$-16b$
1	$1b$	-8

$(b-8)(2b+1) = 0$

$b-8=0$

$b=8$

$2b+1=0$

$b = -1/2$