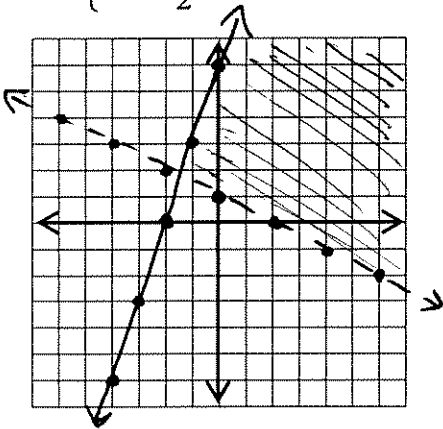


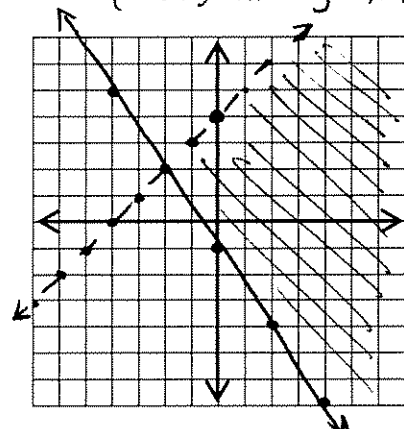
DAY 3

Graph each system of linear inequalities.

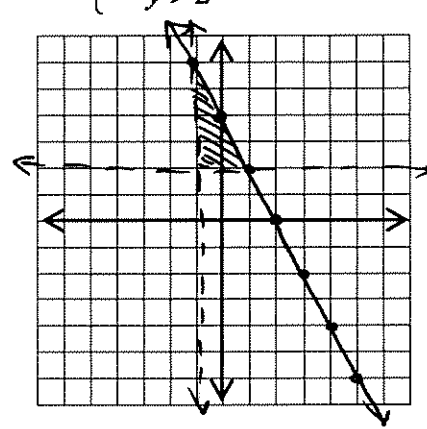
66.
$$\begin{cases} y \leq 3x + 6 \\ y > -\frac{1}{2}x + 1 \end{cases}$$



67.
$$\begin{cases} y \geq -\frac{3}{2}x - 1 \\ -4 + y < x \\ y < x + 4 \end{cases}$$



68.
$$\begin{cases} y \leq -2x + 4 \\ x > -1 \\ y > 2 \end{cases}$$



69. The table gives information about the depth of a diver and the temperature of the water. Use the table to answer the following questions. You may use a calculator.

Depth (below sea level) of a diver in meter (x)	Temperature of the water in degrees (y)
3	61.25
6	60.5
9	59.75
$\Delta x =$	$\Delta y =$

a. Find the slope.

$$m = \frac{60.5 - 61.25}{6 - 3} = \frac{-.75}{3} = \boxed{-.25}$$

b. Find the equation.

$$y - 61.25 = -.25(x - 3)$$

$$y - 61.25 = -.25x + .75$$

$$\boxed{y = -.25x + 62}$$

c. If the diver went 11 meters below sea level, what would the temperature of the water be?

$$y = -.25(11) + 62$$

$$= -2.75 + 62 = \boxed{59.25^\circ\text{F}}$$

Simplify each of the following. All answers must have positive exponents.

70. $4^{-2} \left(\frac{1}{16}\right)$

71. $-3^{-4} \frac{-1}{3^4} = \left(\frac{-1}{81}\right)$

72. $\left(\frac{1}{3}\right)^{-2} = 3^2 = \boxed{9}$

73. $\left(\frac{4}{5}\right)^{-1} = \left(\frac{5}{4}\right)^1 = \boxed{\frac{5}{4}}$

74. $-5^2 = \boxed{-25}$

75. $(8q^3p^9)(-2q^5p^8) = \boxed{-16q^8p^{17}}$

76. $(-3c^5d^4)^3 = \boxed{-27c^{15}d^{12}}$

77. $(-ab^5)^2(2a^3b^4)^5 = (a^2b^{10})(32a^{15}b^{20}) = \boxed{32a^{17}b^{30}}$

78. $\left(\frac{h^4}{g^3h}\right)^2 = \left(\frac{h^3}{g^3}\right)^2 = \boxed{\frac{h^6}{g^6}}$

79. $n^6n^{-2} = \frac{n^6}{n^2} = \boxed{n^4}$

80. $\frac{rs^{-6}}{r^{-3}} = \frac{r \cdot r^3}{s^6} = \boxed{\frac{r^4}{s^6}}$

81. $\left(\frac{x^3z^2}{x^5z}\right)^3 = \left(\frac{z}{x^2}\right)^3 = \boxed{\frac{z^3}{x^6}}$

82. $(w^2z^7)^0$

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83. $\frac{3x^{-4}z^7m^2}{9x^{-2}z^{-3}m^2} = \frac{3x^2z^7z^3m^2}{9x^4m^2} = \frac{z^{10}}{3x^2}$

Simplify each expression by adding, subtracting or multiplying.

84. $(a^2 + ab - 3b^2) + (b^2 + 4a^2 - ab)$

$$5a^2 - 2b^2$$

85. $(x-4)(x+1)$

$$x^2 - 4x + 1x - 4 = x^2 - 3x - 4$$

86. $(5m-3n)(4m-2n)$

$$20m^2 - 10mn - 12mn + 6n^2$$
$$20m^2 - 22mn + 6n^2$$

87. $(7z^2 + 4 - z) - (-5 + 3z^2)$

$$7z^2 + 4 - z + 5 - 3z^2$$
$$4z^2 - z + 9$$

88. $-3jk^2(3jk + 2k^3)$

$$-9j^2k^3 - 6jk^5$$

89. $-\frac{2}{3}n^2(-9n^2 + 3n + 6)$

$$6n^4 - 2n^3 - 4n^2$$

$$\frac{2}{3} \cdot 9 = \frac{18}{3} = 6$$

$$\frac{2}{3} \cdot 3 = \frac{6}{3} = 2$$

$$\frac{2}{3} \cdot 6 = \frac{12}{3} = 4$$

90. $(8x-2)(3x^2+2x-1)$

$$24x^3 + 16x^2 - 8x - 6x^2 - 4x + 2$$
$$24x^3 + 10x^2 - 12x + 2$$

91. $2x^2y^2(3xy + 2y^4 - 5x^3)$

$$6x^3y^3 + 4x^2y^6 - 10x^5y^2$$

92. $(3p-2)^2$

$$(3p-2)(3p-2)$$
$$= 9p^2 - 12p + 4$$

93. $(x^2-1)(x^2+1)$

$$x^4 - 1$$

Factor the following polynomials by GCF.

94. $4x^3 - 12x^2 + 8x$

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

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

95. $-6x^2y^2 - 12xy$

$$-6xy(xy + 2)$$

Factor the following trinomials.

96. $3x^2 - 5x + 2$

$$(3x-2)(x-1)$$

97. $5x^2 - 16x + 3$

$$(5x-1)(x-3)$$

98. $3x^2 - x - 2$

$$(3x+2)(x-1)$$

99. $25x^2 - 64$

$$(5x-8)(5x+8)$$

100. $x^2 - 4x + 4$

$$(x-2)(x-2) = (x-2)^2$$