Algebra 2 Monday 5-6-13 Class Notes

(15) $-18, -13, -8, -3, \ldots \quad a_{52} = ?$

$\boxed{d = 5}$

$$a_N = a_1 + (N-1)d$$

$$a_{52} = -18 + (51)5$$

$$a_{52} = -18 + 255$$

$$\boxed{a_{52} = 237} \quad \checkmark$$

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(50) $-9 + 3b^{\frac{1}{2}} = 15$

$$3b^{\frac{1}{2}} = 24$$

$$\left(b^{\frac{1}{2}}\right)^2 = (8)^2$$

$$\boxed{b = 64}$$

CE $\quad -9 + 3(64)^{\frac{1}{2}} \stackrel{?}{=} 15$

$$-9 + 3(8) \stackrel{?}{=} 15 \quad \checkmark$$

(46) $6 = \sqrt{1-35a}$

CK ✓

$36 = 1-35a$

$35a = -35$

$\boxed{a = -1}$

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(9) $r = \frac{5}{-1} = \boxed{-5}$

✱ $\boxed{a_N = a_1 r^{N-1}}$

$a_8 = (-1)(-5)^{8-1}$

$a_8 = +5^7 =$

$5^4 = 625$

$5^5 = 3125$

$5^6 = 15625$

$\times 5$

$\boxed{78125}$ ✓

(54) $x^2 + y^2 + 8x - 2y + 15 = 0$

$x^2 + 8x + \{4^2\} + y^2 - 2y + \{1^2\} = -15 + \{17\}$

$\boxed{(x+4)^2 + (y-1)^2 = 2}$

Circle

(56) $25x^2 + 16y^2 - 100x + 64y - 236 = 0$

$25x^2 - 100x \quad + 16y^2 + 64y \quad = 236$

$25(x^2 - 4x + \{2^2\}) + 16(y^2 + 4y + \{2^2\}) = 236 + \{164\}$

$\frac{25(x-2)^2}{400} + \frac{16(y+2)^2}{400} = \frac{400}{400}$

$\boxed{\frac{(x-2)^2}{16} + \frac{(y+2)^2}{25} = 1}$

Ellipse

(62)
$$\begin{cases} x^2 + 3y^2 - 33x - 3y + 126 = 0 \\ x - y = 2 \Rightarrow x = 2 + y \end{cases}$$

$$y^2 + 4y + 4 + 3y^2 - 33y - 66 - 3y = -126$$

$$\begin{array}{r} 130 \\ -66 \\ \hline 64 \end{array}$$

$$4y^2 - 32y + 64 = 0$$

$$4(y^2 - 8y + 16) = 0$$

$$4(y - 4)^2 = 0 \quad y = 4$$

$$\therefore x = 6$$

$$(6, 4)$$