

Complex #'s Review 2

① $i\sqrt{8} + 2i\sqrt{50}$
 $\sqrt{4}\sqrt{2} \quad \sqrt{25}\sqrt{2}$
 $2i\sqrt{2} + 2i \cdot 5\sqrt{2}$
 $2i\sqrt{2} + 10i\sqrt{2}$
 (1) $12i\sqrt{2}$

② $i^7 \sqrt{+8} \cdot i^{11} \sqrt{+18}$
 $i^8 \sqrt{8} \cdot i^{12} \sqrt{18}$
 $i^{20} \sqrt{144}$
 $1(12)$
 (3) 12

③ $4i\sqrt{+32x^5}$
 $\sqrt{16x^4} \sqrt{2x}$
 $4i \cdot 4x^2 \sqrt{2x}$
 $16x^2 i \sqrt{2x}$

④ $6x^2 + 2x - 2 = 1$
 $6x^2 + 2x - 3 = 0$
 $a \quad b \quad c$
 $x = \frac{-2 \pm \sqrt{2^2 - 4(6)(-3)}}{2(6)}$
 $x = \frac{-2 \pm \sqrt{76}}{12} < \frac{\sqrt{4}}{\sqrt{19}}$
 $x = \frac{-2 \pm 2\sqrt{19}}{12}$
 $x = \frac{-1 \pm \sqrt{19}}{6}$

⑤ $x^2 + 4x + 6 = 0$
 $a=1$
 $b=4$
 $c=6$
 $x = \frac{-4 \pm \sqrt{4^2 - 4(1)(6)}}{2(1)}$
 $x = \frac{-4 \pm \sqrt{+8}}{2} < \frac{\sqrt{4}}{\sqrt{2}}$
 $x = \frac{-4 \pm 2i\sqrt{2}}{2}$

(3) $x = -2 \pm i\sqrt{2}$

⑥ $3x^2 + 5x + 4 = 0$
 $a=3$
 $b=5$
 $c=4$
 $x = \frac{-5 \pm \sqrt{5^2 - 4(3)(4)}}{2(3)}$
 $x = \frac{-5 \pm \sqrt{-23}}{6}$
 $x = \frac{-5 \pm i\sqrt{23}}{6}$
 $x = \frac{-5}{6} \pm \frac{i\sqrt{23}}{6}$

⑦ $-9xi(i^{88} - i^{22})$
 $-9xi^{89} + 9xi^{23}$
 $-9x(i^1) + 9x(i^{-1})$
 $-9xi - 9xi$
 $-18xi$

⑧ $(7x+4i)(7x-4i)$
 $49x^2 - 28xi + 28xi - 16i^2$
 $49x^2 - 16(-1)$
 (2) $49x^2 + 16$

⑨ $(3x+i\sqrt{2})(3x-i\sqrt{2})$
 $9x^2 - 3xi\sqrt{2} + 3xi\sqrt{2} - i^2$
 $9x^2 - (-1)(2)$
 (1) $9x^2 + 2$

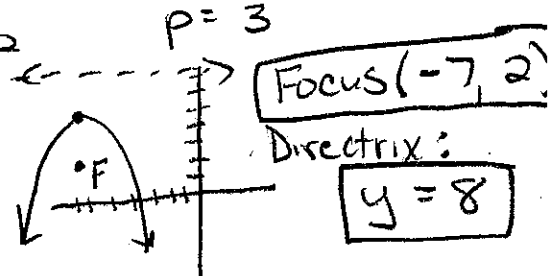
⑩ $x^3 - x^2 + x - 1 = 0$
 $x^2(x-1) + 1(x-1) = 0$
 $(x^2+1)(x-1) = 0$

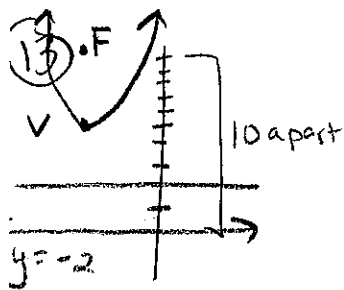
$x^2+1=0$	$x-1=0$
$\sqrt{x^2} = \sqrt{-1}$	$x=1$

 $x = \pm i$
 $\{1, i, -i\}$

⑪ $(2x-3i)(2x-3i)$
 $4x^2 - 6xi - 6xi + 9i^2$
 $4x^2 - 12xi + 9(-1)$
 $4x^2 - 12xi - 9$

⑫ $-12(y-5) = \frac{(x+7)^2}{-12}$
 $y-5 = \frac{1}{-12}(x+7)^2$
 $y = \frac{1}{-12}(x+7)^2 + 5$
 vertex = $(-7, 5)$





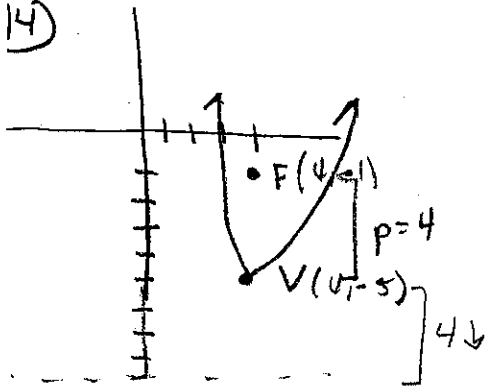
$$p=5$$

$$\text{Vertex} = (-5, 3)$$

$$y = \frac{1}{4(5)}(x+5)^2 + 3$$

$$y = \frac{1}{20}(x+5)^2 + 3$$

14)



$$\text{Directrix: } y = -9$$

$$15) f: \frac{24(y-5)}{24} = \frac{(x+2)^2}{24}$$

$$y-5 = \frac{1}{24}(x+2)^2$$

$$y = \frac{1}{24}(x+2)^2 + 5$$

$$\text{Vertex} = (-2, 5)$$

$$g(x) = -f(x+3) - 6$$

$$(-2, 5) \xrightarrow{\substack{\text{Translate} \\ \text{left } 3}} (-5, 5) \xrightarrow{\substack{\text{x-axis} \\ \text{(negate y)}}} (-5, -5) \xrightarrow{\substack{\text{translate down} \\ 6}} (-5, -11)$$