

## Algebra 3 Assignment # 13

(1) Express each of the following in simplified form please.

(a)  $-\sqrt{-100}$

(j)  $\frac{5}{2 - i}$

(b)  $-3\sqrt{-24}$

(k)  $\frac{14 - 5i}{3 - 2i}$

(c)  $-\sqrt{-75} - \sqrt{-12}$

(l)  $\frac{\sqrt{2} + \sqrt{-2}}{\sqrt{2} - \sqrt{-2}}$

(d)  $(5i)(-3i)$

(m)  $(10i)(3 + i)^{-1}$

(e)  $(7 + 6i) - (-2 + 5i)$

(n)  $7i^9 + 4i^{23}$

(f)  $(4 + 5i)(3 - 2i)$

(o)  $(2i)^3 + 5i^{14} - i^{-1}$

(g)  $(6 + i)(6 - i)$

(p)  $(6i^5 - 3i^9)^3$

(h)  $(2 - 3i)^2$

(q)  $6i^{13} + 7i^{-3} - 4i^{12}$

(i)  $-\frac{6}{i}$

(r)  $(3i^5 - 4i^6 + 5i^7)^2$

(2) Simplify and express in  $a + bi$  form please.

(a)  $(2 - i)^2 - 4(2 - i) + 4$

(b)  $\frac{1 - 4i}{1 + 2i} + \frac{3 + i}{2 - i}$

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## Answers

(1) (a)  $-10i$

(j)  $2 + i$

(b)  $-6\sqrt{6} i$

(k)  $4 + i$

(c)  $-7\sqrt{3} i$

(l)  $i$

(d)  $15$

(m)  $1 + 3i$

(e)  $9 + i$

(n)  $3i$

(f)  $22 + 7i$

(o)  $-5 - 7i$

(g)  $37$

(p)  $-27i$

(h)  $-5 - 12i$

(q)  $-4 + 13i$

(i)  $6i$

(r)  $12 - 16i$

(2) (a)  $-1$

(b)  $\frac{-2 - i}{5}$