

1.5B Multiply Divide Complex #'s Practice

① $(3-4i)^2$
 $(3-4i)(3-4i)$
 $9-12i-12i+16i^2$
 $9-24i-16$
 $-7-24i$

⑦ $(-6-3i)^2$
 $(-6-3i)(-6-3i)$
 $36+18i+18i+9i^2$
 $36+36i-9$
 $27+36i$

② $(2+8i)^2$
 $(2+8i)(2+8i)$
 $4+16i+16i+64i^2$
 $4+32i-64$
 $-60+32i$

⑧ $(5+7i)(3+3i)$
 $15+15i+21i+21i^2$
 $15+36i-21$
 $-6+36i$

③ $(-5+7i)(5-7i)$
 $-25+35i+35i-49i^2$
 $-25+70i+49$
 $24+70i$

⑨ $5i \cdot 5i(6-5i)$
 $25i^2(6-5i)$
 $-25(6-5i)$
 $-150+125i$

④ $(7+8i)^2$
 $(7+8i)(7+8i)$
 $49+56i+56i+64i^2$
 $49+112i-64$
 $-15+112i$

⑩ $-i \cdot -2i(2-2i)$
 $2i^2(2-2i)$
 $-2(2-2i)$
 $-4+4i$

⑤ $(-7+2i)(7-2i)$
 $-49+14i+14i-4i^2$
 $-49+28i+4$
 $-45+28i$

⑪ $\frac{5}{i} \cdot \frac{-i}{-i}$
 $= \frac{-5i}{-i^2}$
 $= \frac{-5i}{1}$ or $-5i$

⑥ $5i \cdot -7i(2-3i)$
 $-35i^2(2-3i)$
 $35(2-3i)$
 $70-105i$

⑫ $\frac{-4}{-7i} \cdot \frac{7i}{7i}$
 $= \frac{-28i}{-49i^2}$
 $= \frac{-28i}{49}$
 $= \frac{-4i}{7}$

1.8B Multiply-Divide Complex #2 Practice

$$\begin{aligned} (13) \quad & \frac{9}{-6i} \cdot \frac{6i}{6i} \\ & = \frac{54i}{-36i^2} \\ & = \frac{54i}{36} \text{ reduce to } \boxed{\frac{6i}{9}} \end{aligned}$$

$$\begin{aligned} (16) \quad & \frac{4+i}{1-5i} \cdot \frac{1+5i}{1+5i} \\ & = \frac{4+20i+i+5i^2}{1^2+5^2} \\ & = \frac{4+21i-5}{1+25} \\ & = \frac{-1+21i}{26} \end{aligned}$$

$$\begin{aligned} (14) \quad & \frac{9-2i}{-10i} \cdot \frac{-10i}{-10i} \\ & = \frac{-90i+20i^2}{-100i^2} \\ & = \frac{-90i-20}{100} \\ & = \frac{-20}{100} - \frac{90i}{100} \\ & \text{reduce} \end{aligned}$$

$$\begin{aligned} (17) \quad & \frac{2-2i}{4+2i} \cdot \frac{4-2i}{4-2i} \\ & = \frac{8-4i-8i+4i^2}{4^2+2^2} \\ & = \frac{8-12i-4}{16+4} \\ & = \frac{4-12i}{20} \end{aligned}$$

$$\boxed{\frac{-2}{10} - \frac{9i}{10}}$$

$$= \frac{4}{20} - \frac{12i}{20} \text{ reduce } \boxed{\frac{1}{5} - \frac{3i}{5}}$$

$$\begin{aligned} (15) \quad & \frac{-6+3i}{-5+3i} \cdot \frac{-5-3i}{-5-3i} \\ & = \frac{30+18i-15i-9i^2}{(-5)^2+(3)^2} \\ & = \frac{30+3i+9}{25+9} \\ & = \frac{39+3i}{34} \end{aligned}$$

$$\begin{aligned} (18) \quad & \frac{4i}{-5+2i} \cdot \frac{-5-2i}{-5-2i} \\ & = \frac{-20i-8i^2}{(-5)^2+2^2} \\ & = \frac{-20i+8}{25+4} \end{aligned}$$

$$\boxed{\frac{39}{34} + \frac{3i}{34}}$$

$$\boxed{\frac{8}{29} - \frac{20i}{29}}$$

$$(19) \frac{3}{-5-3i} \cdot \frac{-5+3i}{-5+3i}$$

$$= \frac{-15+9i}{(-5)^2+3^2}$$

$$= \frac{-15+9i}{25+9}$$

$$= \frac{-15+9i}{36}$$

$$= \frac{-15}{36} + \frac{9i}{36} \text{ reduce } \boxed{\frac{-5}{12} + \frac{1}{4}i}$$

$$(20) \frac{2}{-6+5i} \cdot \frac{-6-5i}{-6-5i}$$

$$= \frac{-12-10i}{(-6)^2+5^2}$$

$$= \frac{-12-10i}{36+25}$$

$$= \frac{-12-10i}{61}$$

$$= \boxed{\frac{-12}{61} - \frac{10}{61}i}$$