LESSON 4.6

NAME Key DATE

Practice A

For use with pages 236–242

Simplify the expression.

1. $\frac{5}{1+i}\frac{(1-i)}{(1-i)} = \boxed{\frac{5-5i}{2}}$

$1+1$

2. $\frac{4}{1-i}\frac{(1+i)}{(1+i)} = \frac{4+4i}{2}$

$1+1$

$= \boxed{2+2i}$

3. $\frac{6i}{2-3i}\frac{(2+3i)}{(2+3i)} = \frac{12i+18i^2}{13}$

$4+9$

$= \boxed{\frac{-18+12i}{13}}$

4. $\frac{5i}{3+4i}\frac{(3-4i)}{(3-4i)} = \frac{15i-20i^2}{25}$

$9+16$

$\frac{20+15i}{25} = \boxed{\frac{4+3i}{5}}$

5. $\frac{3}{1+i}\frac{(1-i)}{(1-i)} = \boxed{\frac{3-3i}{2}}$

$1+1$

6. $\frac{5}{2-i}\frac{(2+i)}{(2+i)} = \boxed{\frac{10+5i}{3}}$

$2+1$

7. $\frac{1+i}{1-i}\frac{(1+i)}{(1+i)} = \frac{1+2i+i^2}{2}$

$1+1$

$= \frac{2i}{2} = \boxed{i}$

8. $\frac{2+3i}{2-3i}\frac{(2+3i)}{(2+3i)} = \frac{4+6i+6i+9i^2}{13}$

-9

$4+9$

$\boxed{\frac{-5+12i}{13}}$

Simplify the expression.

9. $\frac{6}{2+i}\frac{(2-i)}{(2-i)} = \boxed{\frac{12-6i}{5}}$

$4+1$

10. $\frac{7}{5-i}\frac{(5+i)}{(5+i)} = \boxed{\frac{35+7i}{26}}$

$25+1$

11. $\frac{12i}{6+2i}\frac{(6-2i)}{(6-2i)} = \frac{72i-24i^2}{40}$

$+24$

$36+4$

$= \boxed{\frac{3+9i}{5}}$

12. $\frac{10}{5-3i}\frac{(5+3i)}{(5+3i)} = \frac{50+30i}{34}$

$25+9$

$= \boxed{\frac{25+15i}{17}}$

13. $\frac{14i}{6-11i}\frac{(6+11i)}{(6+11i)} = \frac{84i+154i^2}{157}$

$36+121$

$\boxed{\frac{-154+84i}{157}}$

14. $\frac{16i}{5-13i}\frac{(5+13i)}{(5+13i)} = \frac{80i+208i^2}{194}$

$25+169$

$\frac{-208+80i}{194} = \boxed{\frac{-104+40i}{97}}$

15. $\frac{(6+i)}{(6-i)}\frac{(6+i)}{(6+i)} = \frac{36+12i+i^2}{36+1}$

-1

$= \boxed{\frac{35+12i}{37}}$

16. $\frac{(5-7i)}{(5+7i)}\frac{(5-7i)}{(5-7i)} = \frac{25-35i-35i+49i^2}{25+49}$

-49

$\frac{-24-70i}{74} = \boxed{\frac{-12-35i}{37}}$