

Write each expression as a pure imaginary number.

1. $\sqrt{-25}$

$5i$

2. $-\sqrt{-81}$

$-9i$

3. $\sqrt{-13}$

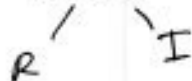
$i\sqrt{13}$

4. $\sqrt{-45}$

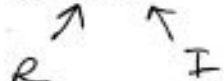
$3i\sqrt{5}$

Identify the real and imaginary parts of each complex number.

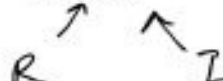
5. $4+5i$



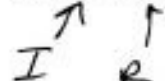
6. $-3+2i$



7. $6-3i$



8. $13i+0$



Write each expression as a complex number in standard form (a+bi).

9. $5+\sqrt{-49}$

$5+7i$

10. $-2-\sqrt{-28}$

$-2-2\sqrt{7}i$

11. $\frac{10-\sqrt{-25}}{5}$

$2-i$

12. $\frac{4-\sqrt{-8}}{12}$

$\frac{2-\sqrt{2}i}{6}$

Add or subtract as indicated. Write answers in standard form.

13. $(4+5i)+(2-7i)$

$6-2i$

14. $(4+i)-(8-5i)$

$-4+6i$

15. $(-4+\sqrt{-25})+(1-\sqrt{-16})$

$-3+i$

16. $(4-\sqrt{-4})-(2+\sqrt{-9})$

$2-5i$

17. $(-2+\sqrt{-18})+(5-\sqrt{-50})$

$3-2\sqrt{2}i$

18. $(-10+\sqrt{-20})+(-6+\sqrt{-45})$

$-16+5\sqrt{5}i$

Multiply. Write answers in standard form.

19. $6i(2-4i)$

$24+12i$

20. $\frac{1}{3}i(12-15i)$

$5+4i$

21. $(2+i)(4+3i)$

$6+10i$

22. $(5-2i)(-1+2i)$

~~$8-4+4i$~~

$-1+12i$

23. $(3+2i)^2$

~~$5+12i$~~

$5+12i$

24. $(2+\sqrt{-81})(-3-\sqrt{-100})$

$84-47i$

Write the complex conjugate of the following complex numbers:

25. $3+2i$

$3-2i$

26. $7-12i$

$7+12i$

27. $-8i$

$8i$

28. $15i$

$-15i$

29. $-3+4i$

$-3-4i$

30. $-7-16i$

$-7+16i$

31. $45i$

$-45i$

32. $a-bi$

$a+bi$

Review

1. State the zeros, multiplicity,

and end behavior of $h(x) = x(x+3)^2(x-2)$
deg 4, +

$x = 0$ m1

$x = -3$ m2

$x = 2$ m1

$\lim_{x \rightarrow -\infty} h(x) = \infty$

$\lim_{x \rightarrow \infty} h(x) = \infty$

2. Sketch a graph of the following

polynomial $g(x) = -x(x-3)^2(x+4)$

deg 4, -

