

1. $i = \sqrt{-1}$ and is used to write the square root of any negative number.

2. $2i$; 5

3. Add the real parts and the imaginary parts separately.

4. $3 + 0i$; It is the only one that is not an imaginary number.

5. $6i$

6. $8i$

7. $3i\sqrt{2}$

8. $2i\sqrt{6}$

9. $8i$

10. $-21i$

11. $-16i\sqrt{2}$

12. $6\sqrt{-63} = 6\sqrt{63} \cdot \sqrt{-1}$
 $= 18i\sqrt{7}$

13. $x = 2$ and $y = 2$

14. $x = 9$ and $y = 6$

15. $x = -2$ and $y = 4$

16. $x = -4$ and $y = -3$

17. $x = 7$ and $y = -12$

18. $x = -5$ and $y = -13$

19. $x = 6$ and $y = 28$

20. $x = 30$ and $y = -\frac{2}{3}$

21. $13 + 2i$

22. $20 + 7i$

24. $-2 - 20i$

25. 19

26. 14

27. $4 + 2i$

28. $14 + 2i$

29. $-4 - 14i$

30. $5 + 9i$

31. a. $-4 + 5i$

b. $2\sqrt{2} + 10i$

32. a. $z_a = -1 - i$

b. $z_a = -3 + i$

c. $z_a = 2 - 8i$