4.5 – 4.6 Worksheet

Solve the equation. (No calculator)

1. \(4x^2 = 64\)
   \[x^2 = 16\]
   \[x = \pm 4\]

2. \[\frac{3(p-1)^2}{3} = \frac{15}{3}\]
   \[(p-1)^2 = 5\]
   \[p - 1 = \pm \sqrt{5}\]
   \[p = 1 \pm \sqrt{5}\]

3. \[\frac{8(m+5)^2}{8} = \frac{32}{8}\]
   \[(m+5)^2 = 4\]
   \[m + 5 = \pm 2\]
   \[m = -3, m = -7\]

4. \[-2z^2 = 288\]
   \[z^2 = 144\]
   \[z = \pm 12\]

5. \(s^2 + 12 = 9\)
   \[s^2 = -3\]
   \[s = \pm 3i\]

6. \(3x^2 - 30 = 6\)
   \[3x^2 = 36\]
   \[x = \pm 4\]

Write the expression as a complex number in standard form. (No calculator)

7. \((5 - 3i) + (-2 + 5i)\)
   \[3 + 2i\]

8. \((-2 + 9i) - (7 - 8i)\)
   \[-2 + 9i - 7 + 8i\]
   \[9 + 17i\]

9. \[3i(7 - 9i)\]
   \[21i + 27i^2\]
   \[21i - 27\]

10. \((8 - 3i)(-6 - 10i)\)
    \[48 - 80i + 18i + 30i^2\]
    \[48 - 62i - 30\]
    \[18 - 62i\]

11. \[\frac{-4i}{6 + 11i} \cdot \frac{-6 + 11i}{6 + 11i}\]
    \[-4i + 44i^2\]
    \[36 - 6i + 6i - 12i^2\]
    \[-44 - 24i\]
    \[36 + 12i\]

12. \[\frac{3 - 2i}{x - 8 - 5i}\]
    \[\frac{-24 - 15i + 16i + 10i^2}{64 + 40i - 40i - 25i^2}\]
    \[-24 + i - 10\]
    \[\frac{89}{89}\]
    \[\frac{-34 + i}{89}\]