Solve:

1. \(x^2 = 100\)
   - [A] \(\sqrt{10}, -\sqrt{10}\)
   - [B] \(\sqrt{10}\)
   - [C] 10
   - [D] \(-10, 10\)

2. \(x^2 = 121\)
   - [A] \(\sqrt{11}, -\sqrt{11}\)
   - [B] \(\sqrt{11}\)
   - [C] \(-11, 11\)
   - [D] 11

3. \(x^2 = 36\)
   - [A] \(6\)
   - [B] \(-6, 6\)
   - [C] \(\sqrt{6}, -\sqrt{6}\)
   - [D] 6

4. \(x^2 = 25\)
   - [A] \(-5, 5\)
   - [B] \(\sqrt{5}, -\sqrt{5}\)
   - [C] \(\sqrt{5}\)
   - [D] 5

5. \(x^2 = 169\)
   - [A] \(\sqrt{13}, -\sqrt{13}\)
   - [B] \(\sqrt{13}\)
   - [C] 13
   - [D] \(-13, 13\)

6. Determine the number of solutions of the equation and solve for them.
   \(9x^2 + 12 = 12\)

7. Determine the number of solutions of the equation and solve for them.
   \(-4x^2 + 7 = 128\)
15. This table shows the height in feet of some of the tallest buildings in the United States.

<table>
<thead>
<tr>
<th>Building</th>
<th>City</th>
<th>Height (in ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sears Tower</td>
<td>Chicago</td>
<td>1454</td>
</tr>
<tr>
<td>World Trade Center</td>
<td>New York City</td>
<td>1377</td>
</tr>
<tr>
<td>Empire State Building</td>
<td>New York City</td>
<td>1250</td>
</tr>
<tr>
<td>AMOCO</td>
<td>Chicago</td>
<td>1136</td>
</tr>
<tr>
<td>John Hancock Center</td>
<td>Chicago</td>
<td>1127</td>
</tr>
<tr>
<td>Chrysler</td>
<td>New York City</td>
<td>1046</td>
</tr>
<tr>
<td>First Interstate World Center</td>
<td>Los Angeles</td>
<td>1017</td>
</tr>
</tbody>
</table>

The length of time it would take an object to fall from the top of one of these structures is \( h(t) = -16t^2 + H \), where \( H \) is the height in feet of the structure, \( t \) is the number of seconds and \( h(t) \) is the height after \( t \) seconds. Find the time it would take an object to fall to the ground from the top of the John Hancock Center. Round your answer to the nearest hundredth of a second.

16. Solve the equation and round your answer to the nearest tenth.

\[ 8x^2 - 96 = 0 \]

17. Solve the equation and round your answer to the nearest tenth.

\[ 4x^2 - 81 = 0 \]

18. Solve the equation and round your answer to the nearest tenth.

\[ 8x^2 - 20 = 0 \]

19. Solve the equation and round your answer to the nearest tenth.

\[ 7x^2 - 72 = 0 \]

20. Find the radius of a circle with an area of 125 in\(^2\). Use the formula \( A = \pi r^2 \), where \( A \) is the area and \( r \) is the radius. Round your answer to the nearest tenth.
[1] D____
[2] C____
[3] B____
[5] D____

[6] one solution: 0
[7] no solution
[8] one solution: 0
[9] two solutions: -9, 9
[10] one solution: 0
[11] 3.4, -3.4
[12] 3.7, -3.7
[13] 3.3, -3.3
[14] 4.9, -4.9
[15] 8.39 seconds
[16] 3.5, -3.5
[17] 4.5, -4.5
[18] 1.6, -1.6
[19] 3.2, -3.2
[20] 6.3 in.