

**East Los Angeles College**  
**Department of Mathematics**  
**Math 125**  
**Practice Test 3**

**Show all work for credit.**

Evaluate or simplify the following rational exponents.

1.  $\sqrt{-125}$

2.  $\sqrt{-16}$

3.  $\sqrt{-40}$

4.  $\sqrt{-24}$

5.  $81^{\frac{1}{2}}$

6.  $64^{\frac{1}{3}}$

7.  $36^{\frac{3}{2}}$

8.  $64^{\frac{2}{3}}$

9.  $(-125)^{\frac{4}{3}}$

10.  $100^{-\frac{1}{2}}$

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Use properties of exponents to write as positive powers.

11.  $x^{\frac{3}{4}} \cdot x^{\frac{1}{4}}$

12.  $x^{-\frac{1}{2}} \cdot x^{\frac{2}{3}}$

13.  $\frac{x^{4/3}}{x^{-1/2}}$

14.  $(x^{-2/5})^{1/2}$

Add or Sub the following complex numbers:

15.  $(4 - i) + (-2 + 3i)$

16.  $(-2 - 3i) - (-5 + 2i)$

Multiply or Divide the following:

17.  $-5i(3 + 4i)$

18.  $(3 - 5i)(1 - 2i)$

19.  $(3 + 2i)^2$

20.  $(2 + 5i)(2 - 5i)$

21.  $\frac{7}{3i}$

22.  $\frac{2+5i}{4+i}$

Solve the following equations for x and write your answers in set notation.

23.  $x^2 = 16$

24.  $x^2 = -16$

25.  $3x^2 - 2 = 22$

26.  $9x^2 = 45$

27.  $(x - 3)^2 = -25$

28.  $(x + 4)^2 = 20$

29.  $4\sqrt{x + 6} - 5 = 23$

30.  $-3\sqrt{x} = 15$

31.  $\sqrt{3x + 5} = \sqrt{x - 9}$

32.  $5\sqrt{x} = x$

Solve for x by completing the square and write your answers in set notation.

33.  $x^2 + 4x + 7 = 0$

34.  $2x^2 - 4x + 5 = 0$

Solve for x by using the quadratic formula and write your answers in set notation.

35.  $x^2 + 6x - 5 = 0$

36.  $3x^2 - 4x - 2 = 0$

Solve the following quadratic In Form equations for x.

37.  $x^4 + 5x^2 + 6 = 0$

38.  $x + \sqrt{x} - 6 = 0$

39.  $2x^{-2} + x^{-1} - 15 = 0$

40.  $x^{2/3} - 2x^{1/3} - 8 = 0$

### Answer Sheet

<b>1</b>		<b>21</b>	
<b>2</b>		<b>22</b>	
<b>3</b>		<b>23</b>	
<b>4</b>		<b>24</b>	
<b>5</b>		<b>25</b>	
<b>6</b>		<b>26</b>	
<b>7</b>		<b>27</b>	
<b>8</b>		<b>28</b>	
<b>9</b>		<b>29</b>	
<b>10</b>		<b>30</b>	
<b>11</b>		<b>31</b>	
<b>12</b>		<b>32</b>	
<b>13</b>		<b>33</b>	
<b>14</b>		<b>34</b>	
<b>15</b>		<b>35</b>	
<b>16</b>		<b>36</b>	
<b>17</b>		<b>37</b>	
<b>18</b>		<b>38</b>	
<b>19</b>		<b>39</b>	
<b>20</b>		<b>40</b>	