

Show ALL WORK for full credit!!!

1. Solve using the square root method. Simplify square roots - no decimals.

A. $\frac{1}{2}x^2 - 2 = 10$

$\frac{1}{2}x^2 = 12$

$x^2 = 24$

$x = \pm \sqrt{24} = \pm 2\sqrt{6}$

B. $4(x+5)^2 = 64$

$(x+5)^2 = 16$

$x+5 = \pm 4$

$x = -5 \pm 4$

$x = -9, -1$

A. _____

B. _____

Write the expression as a complex number in standard form.

2. $(6+3i) + (-4+10i)$

$= 2 + 13i$

3. $(4-5i) + 6i$

$= 4 + i$

2. _____

3. _____

4. $(-2+6i) - (2-3i)$

$= -4 + 9i$

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

$= -4 + 5i$

4. _____

5. _____

6. $4i(2-5i)$

$= 20 + 8i$

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

$= 10 - 2i + 25i - 5i^2$

$= 15 + 23i$

6. _____

7. _____

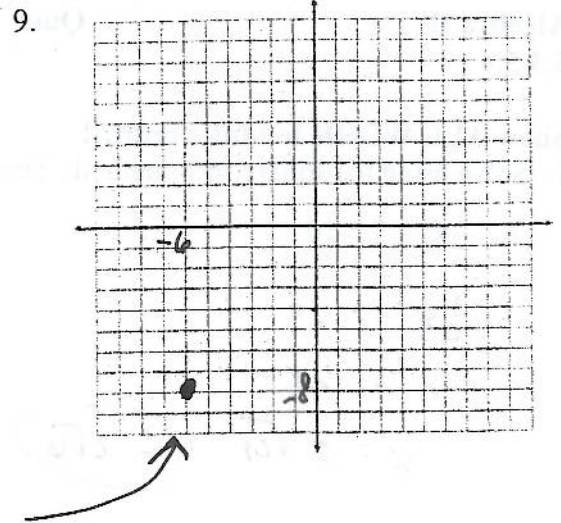
8. $\frac{(2-3i)(6-i)}{(6+i)(6-i)}$

$= \frac{12 - 2i - 18i + 3i^2}{36 - i^2}$

$= \frac{9 - 20i}{37}$

8. _____

9. Graph $-6 - 8i$ in the complex plane.



10. For each row put a check in the appropriate column(s) for the subsets the number is a member of.

Number	Real	Pure Imaginary	Complex
1.27	✓		✓
-2	✓		✓
$\frac{3}{7}$	✓		✓
5i		✓	✓
1.4	✓		✓
$-3 + i$			✓
$\sqrt{-4}$		✓	✓

11. WHAT IS THE ABSOLUTE VALUE OR MAGNITUDE OF THE COMPLEX NUMBER $-3 - 4i$? $\sqrt{9+16} = \sqrt{25}$

5

12. Simplify $i^{27} = i^3 = -i$

$-i$

13. Solve $2x^2 + 9 = -41$
 $2x^2 = -50$
 $x^2 = -25$
 $x = \pm 5i$

$x = \pm 5i$