Review Rational Exponents, Radical eqns, complex operations & solving quadratics

Simplify. Your answer should contain one variable and only positive exponents.

1) $\left(p^{-\frac{5}{3}}\right)^{-\frac{3}{2}} \cdot p^2$

2) $\dfrac{4r^{-2} \cdot 3r^{\frac{5}{3}}}{2r^{-2}}$

3) $\left(\dfrac{b^0}{b^{-1}}\right)^{\frac{1}{2}}$

4) $v^{-\frac{1}{2}} \cdot 4v^2$

5) $\dfrac{p^{\frac{5}{4}}}{3p^{-2}}$

6) $\left(p^2\right)^0$

Solve each equation. Remember to check for extraneous solutions.

7) $7 = 2 + \sqrt{45 - 2p}$

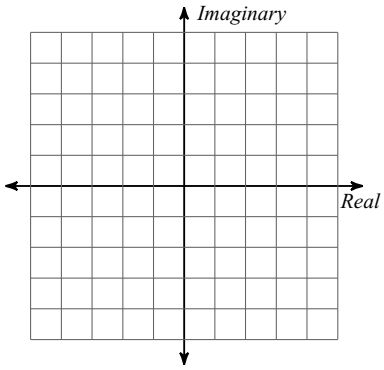
8) $\sqrt{\dfrac{n}{6}} - 8 = -8$

9) $\sqrt{n} = \sqrt{10 - n}$

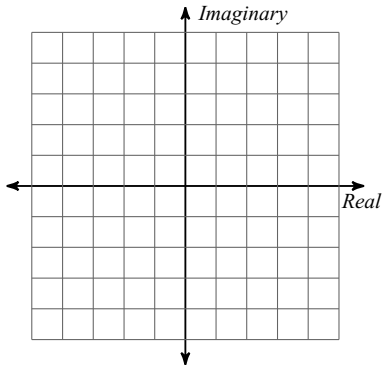
10) $\sqrt{16 - x} = \sqrt{2x - 14}$

Graph each number in the complex plane.

11) $2 + 3i$



12) $-4i$



Simplify.

13) $8 - 3 + 5i$

14) $(-8 - 8i) + (-7 - 2i)$

15) $(-7 - 5i)(-3 + 3i)$

16) $8(-6 + 5i) + 6(i)$

Solve each equation by any quadratic method.

17) $v^2 - 8v + 13 = -3$

18) $6v^2 = -30$

19) $-6p^2 = 60$

20) $-12x^2 - 9 = 0$

21) $-4m^2 - 4 = 0$

22) $10r^2 - 12r + 4 = 0$