

Name: Key

Solving review

Solve. Give exact answers in simplest form. (no rounding) Give both real and imaginary solutions.

1.)  $x^2 - 8x - 20 = 0$

$$x = 10$$
$$x = -2$$

2.)  $x^2 + 10x + 35 = 0$

$$x = -5 \pm i\sqrt{10}$$

3.)  $4x^2 - 4x - 17 = 0$

$$x = \frac{1 \pm 3\sqrt{2}}{2}$$

4.)  $5x^2 + 2 = 5x$

$$x = \frac{5 \pm i\sqrt{15}}{10}$$

5.)  $(3x - 2)^2 = 121$

$$x = \frac{13}{3}$$
$$x = -3$$

6.)  $x^2 = 6x - 9$

$$x = 3$$

7.)  $x^3 - 4x^2 - 5x = 0$

$$x = 0, 5, -1$$

8.)  $x^3 - 8 = 0$

$$x = 2,$$
$$x = -1 \pm i\sqrt{3}$$

9.)  $x^4 = 2x^3 - x^2$

$$x = 0, 1$$

10.)  $x^4 - x^3 + 27x - 27 = 0$

$$x = -3, 1$$
$$x = \frac{3 \pm 3i\sqrt{3}}{2}$$

11.)  $x^3 + 5x^2 = 4x + 20$

$$x = \pm 2, -5$$

12.)  $36x + 9x^2 = x^4 + 4x^3$

$$x = 0, \pm 3, -4$$

$$13.) x^4 - 7x^2 = 8$$

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

$$x = \pm i$$

$$15.) 250x^5 = 16x^2$$

$$x = 0, \frac{2}{5}$$

$$x = \frac{-1 \pm i\sqrt{3}}{5}$$

$$17.) 8x^2 = 7 - 10x$$

$$x = \frac{1}{2}, -\frac{7}{4}$$

$$19.) 2x^5 + 8x = 10x^3$$

$$x = 0, \pm 2, \pm 1$$

$$21.) 6x^4 - 2x^3 = 2x - 6x^2$$

$$x = 0, \frac{1}{3}$$

$$x = \pm i$$

$$23.) 2x^2 = 18$$

$$x = \pm 3$$

$$25.) x^3 + 6x^2 - 4x - 24 = 0$$

$$x = -6, \pm 2$$

$$14.) 3x^4 + 24x = 0$$

$$x = 0$$

$$x = -2$$

$$x = 1 \pm i\sqrt{3}$$

$$16.) 3x^2 = 12x - 15$$

$$x = 2 \pm i$$

$$18.) (4x + 4)^2 = -16$$

$$x = -1 \pm i$$

$$20.) 2x^3 - 3x^2 = 12 - 8x$$

$$x = \pm 2i, x = \frac{3}{2}$$

$$22.) 4x^3 - 16x = 0$$

$$x = 0, \pm 2$$

$$24.) 3x^4 - 12x^2 - 36 = 0$$

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

$$x = \pm i\sqrt{2}$$