● 標準時間 15分

得点　　／100

チェックテスト 12A　2次方程式の解き方①

1 次の方程式を解きなさい。　ステップ①

① $x^2 = 6$

② $x^2 - 12 = 0$
$x^2 = 12$

③ $2x^2 = 50$
$x^2 = 25$

④ $2x^2 + 3 = 21$
$2x^2 = 18$
$x^2 = 9$

⑤ $3x^2 + 1 = 7$
$3x^2 = 6$
$x^2 = 2$

⑥ $25x^2 - 7 = -3$
$25x^2 = 4$
$x^2 = \dfrac{4}{25}$

2 次の方程式を解きなさい。　ステップ②

① $(x-1)^2 = 81$
$x - 1 = \pm 9$
$x = 1 \pm 9$

② $(x+3)^2 + 2 = 8$
$(x+3)^2 = 6$
$x + 3 = \pm\sqrt{6}$

③ $2(x-2)^2 - 16 = 0$
$2(x-2)^2 = 16$
$(x-2)^2 = 8$
$x - 2 = \pm 2\sqrt{2}$

④ $5(x+6)^2 + 6 = 11$
$5(x+6)^2 = 5$
$(x+6)^2 = 1$
$x + 6 = \pm 1$
$x = -6 \pm 1$

⑤ $4(x-1)^2 = 20$
$(x-1)^2 = 5$
$x - 1 = \pm\sqrt{5}$

⑥ $7(x+2)^2 = 4$
$(x+2)^2 = \dfrac{4}{7}$
$x + 2 = \pm\dfrac{2}{\sqrt{7}}$
$x + 2 = \pm\dfrac{2\sqrt{7}}{7}$

3 次の方程式を解きなさい。　ステップ③

① $x^2 + 2x = 8$
$x^2 + 2x + 1^2 = 8 + 1^2$
$(x+1)^2 = 9$
$x + 1 = \pm 3$
$x = -1 \pm 3$

② $x^2 - 4x = -3$
$x^2 - 4x + 2^2 = -3 + 2^2$
$(x-2)^2 = 1$
$x - 2 = \pm 1$
$x = 2 \pm 1$

③ $x^2 + 4x - 8 = 0$
$x^2 + 4x = 8$
$x^2 + 4x + 2^2 = 8 + 2^2$
$(x+2)^2 = 12$
$x + 2 = \pm 2\sqrt{3}$

④ $x^2 - 6x + 7 = 0$
$x^2 - 6x = -7$
$x^2 - 6x + 3^2 = -7 + 3^2$
$(x-3)^2 = 2$
$x - 3 = \pm\sqrt{2}$

⑤ $x^2 - 8x + 13 = 0$
$x^2 - 8x = -13$
$x^2 - 8x + 4^2 = -13 + 4^2$
$(x-4)^2 = 3$
$x - 4 = \pm\sqrt{3}$

⑥ $x^2 + 12x - 4 = 0$
$x^2 + 12x = 4$
$x^2 + 12x + 6^2 = 4 + 6^2$
$(x+6)^2 = 40$
$x + 6 = \pm 2\sqrt{10}$

⑦ $x^2 - 3x = 2$
$x^2 - 3x + \left(\dfrac{3}{2}\right)^2 = 2 + \left(\dfrac{3}{2}\right)^2$
$\left(x - \dfrac{3}{2}\right)^2 = \dfrac{17}{4}$
$x - \dfrac{3}{2} = \pm\dfrac{\sqrt{17}}{2}$

⑧ $x^2 + 5x + 2 = 0$
$x^2 + 5x = -2$
$x^2 + 5x + \left(\dfrac{5}{2}\right)^2 = -2 + \left(\dfrac{5}{2}\right)^2$
$\left(x + \dfrac{5}{2}\right)^2 = \dfrac{17}{4}$
$x + \dfrac{5}{2} = \pm\dfrac{\sqrt{17}}{2}$

1　　5点×6

① $x = \pm\sqrt{6}$

② $x = \pm 2\sqrt{3}$

③ $x = \pm 5$

④ $x = \pm 3$

⑤ $x = \pm\sqrt{2}$

⑥ $x = \pm\dfrac{2}{5}$

2　　5点×6

① $x = 10,\ -8$

② $x = -3 \pm\sqrt{6}$

③ $x = 2 \pm 2\sqrt{2}$

④ $x = -5,\ -7$

⑤ $x = 1 \pm\sqrt{5}$

⑥ $x = -2 \pm\dfrac{2\sqrt{7}}{7}$

3　　5点×8

① $x = 2,\ -4$

② $x = 3,\ 1$

③ $x = -2 \pm 2\sqrt{3}$

④ $x = 3 \pm\sqrt{2}$

⑤ $x = 4 \pm\sqrt{3}$

⑥ $x = -6 \pm 2\sqrt{10}$

⑦ $x = \dfrac{3}{2} \pm\dfrac{\sqrt{17}}{2}$

⑧ $x = -\dfrac{5}{2} \pm\dfrac{\sqrt{17}}{2}$