

Ch 8 - class test

① $16x^2 - 1$ perfect Squares $\sqrt{16} = 4$
 $\sqrt{1} = 1$ 5

$(4x+1)(4x-1)$

② $2x^2 - 5x - 3$ $2x^2 + 1x - 6x - 3$

$\underbrace{\hspace{10em}}$

$x(2x+1) - 3(2x+1)$ 5

~~$2x(2x+1) - 3(2x+1)$~~

$(x-3)(2x+1)$

✓ -6
 $+1-6$
 $-2-3$

③ $2x^2 - 11x + 4 = 0$
 $a = 2 \quad b = -11 \quad c = 4$

$$x = \frac{-(-b) \pm \sqrt{(b)^2 - 4(a)(c)}}{2(a)}$$

$$x = \frac{-(-11) \pm \sqrt{(-11)^2 - 4(2)(4)}}{2(2)} \quad \text{10}$$

$$x = \frac{11 \pm \sqrt{121 - 32}}{4}$$

$$x = (11 \pm \sqrt{89}) \div 4$$

$$x = (11 + \sqrt{89}) \div 4 = 5.108 \quad \boxed{5.11}$$

$$x = (11 - \sqrt{89}) \div 4 = 0.391 \quad \boxed{0.39}$$

2 decimal places

④ $-6 - 2x + x^2 = 0$

$a = 1 \quad b = -2 \quad c = -6$

NB watch order here.

use
Quadratic
Formula.

$$X = \frac{- (b) \pm \sqrt{(b)^2 - 4(a)(c)}}{2(a)}$$

$$X = \frac{- (-2) \pm \sqrt{(-2)^2 - 4(1)(-6)}}{2(1)}$$

$$X = \frac{2 \pm \sqrt{4+24}}{2} = X = \frac{2 \pm \sqrt{28}}{2}$$

$$X = 1 + \sqrt{7} \quad \text{and} \quad 1 - \sqrt{7} \quad \text{! Surd form}$$

10

Q5 = $X = -1$ $X = 5$ (Roots)
 $\frac{1}{1} \times 2$

$2x = -1$ $(x-5)$ (Factors)
 $(2x+1)$

$$(2x+1)(x-5) = 0$$

$$2x(x-5) + 1(x-5) = 0$$

$$2x^2 - 10x + x - 5 = 0$$

$$2x^2 - 9x - 5 = 0$$

10

Q6 $x, 13-x$ are the two Numbers

$$(x)^2 + (13-x)^2 = 89$$

$$x^2 + (13-x)(13-x) - 89 = 0$$

$$x^2 + 13(13-x) - x(13-x) - 89 = 0$$

$$x^2 + 169 - 26x + x^2 - 89 = 0$$

$$2x^2 - 26x + 80 = 0$$

$$x^2 - 13x + 40 = 0$$

$$x^2 - 5x - 8x + 40 = 0$$

$$x(x-5) + 8(x-5) = 0$$

$$x+8=0 \quad x-5=0$$

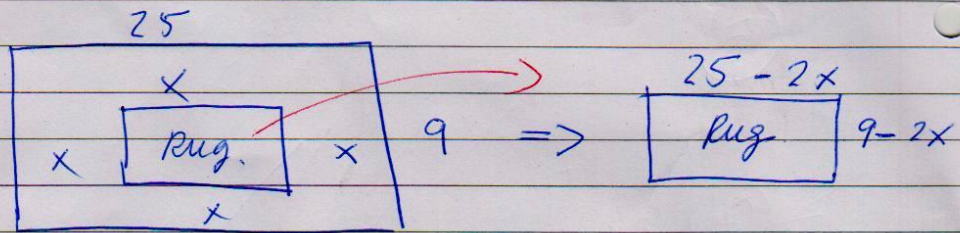
$$x=-8 \quad x=5$$

10

if $x=5$ $13-5=8$

5, 8

Q7



$$L \times W = 57$$

$$(25 - 2x)(9 - 2x) = 57$$

$$25(9 - 2x) - 2x(9 - 2x) - 57 = 0$$

$$225 - 50x - 18x + 4x^2 - 57 = 0$$

$$4x^2 - 68x + 168 = 0$$

$$x^2 - 17x + 42 = 0$$

(42)

$$-3 - 14$$

$$x^2 - 3x - 14x + 42 = 0$$

$$x(x - 3) - 14(x - 3)$$

$$(x - 14)(x - 3) = 0$$

$$x - 14 = 0$$

$$x - 3 = 0$$

$$x = 14$$

$$x = 3$$

x = 3

(x = 14 is too big for diagram dimensions)

60 Total