

Review

$$1) \frac{8x^2}{8} = \frac{48}{8}$$

$$\sqrt{x^2} = \sqrt{6}$$

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

$$2) V = lwh$$

$$\text{width} = x$$

$$2400 = 4x \cdot x \cdot b$$

$$\text{length} = 4x$$

$$\frac{2400}{24} = \frac{24x^2}{24}$$

$$\text{height} = 6$$

$$\sqrt{100} = \sqrt{x^2}$$

$$\pm 10 = x$$

$$\begin{aligned} W &= 10 \text{ in} \\ l &= 40 \text{ in} \\ h &= 6 \text{ in} \end{aligned}$$

$$3) x^2 - x - 48 = 8$$

$$\begin{array}{r} -8 \\ -8 \end{array}$$

$$x^2 - x - 56 = 0$$

$$(x-8)(x+7) = 0$$

$$x=8 \quad x=-7$$

$$4) x^2 - 16x + \underline{\quad}$$

$$\left(\frac{-16}{2}\right)^2$$

$$(-8)^2$$

$$64$$

$$5) x^2 + 4x + 4 = 0$$

$$(x+2)(x+2) = 0$$

$$x = -2$$

$$6) y = x^2 + 2x + 26$$

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

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

$$x^2 + 2x + 1 = -26 + 1$$

$$(x+1)^2 = -25$$

$$(x+1)^2 + 25 = 0$$

$$7) 2x^2 - x - 5 = 17 \quad \text{Q.F.}$$
$$-17 - 17$$

$$2x^2 - x - 22 = 0$$

$$a = 2$$
$$b = -1$$
$$c = -22$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

1777

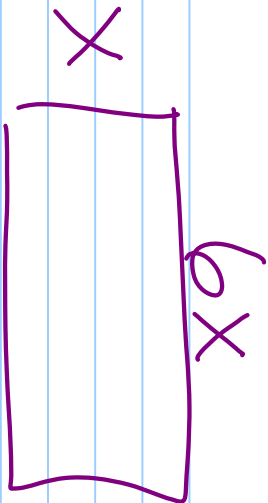
$$x = \frac{1 \pm \sqrt{(-1)^2 - 4(2)(-22)}}{2(2)}$$

3 59

$$x = \frac{1 \pm \sqrt{1 + 176}}{4}$$

$$x = \frac{1 \pm \sqrt{177}}{4}$$

8)

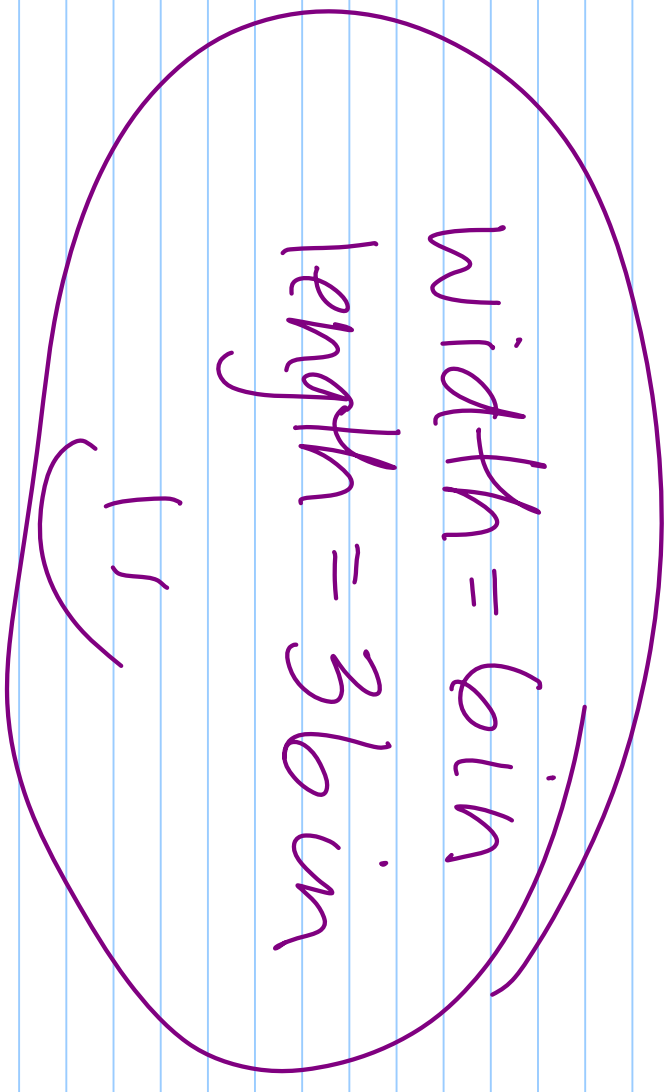


$$x \cdot 6x = 216$$

$$\frac{6x^2}{6} = \frac{216}{6}$$

$$\sqrt{x^2} = \sqrt{36}$$

$$x = \pm 6$$



$$9) \quad 6x^2 - 11x - 11 = -1 \\ +1 \quad +1$$

$$6x^2 - 11x - 10 = 0$$

$$b^2 - 4ac$$

$$(-11)^2 - 4(6)(-10)$$

$$121 + 240$$

361, so 2 real solutions

$$10) \quad y = (x-5)^2 - 6$$

$$y = (x-5)(x-5) - 6$$

$$y = x^2 - 10x + 25 - 6$$

$$y = x^2 - 10x + 19$$

$$11) a) 11 - 2i$$

$$b) -4 + 6i$$

$$c) (3 - 2i)(4 + 5i)$$

$$12 + 15i - 8i - 10i^2$$

$$12 + 7i - 10(-1)$$

$$12 + 7i + 10$$

$$22 + 7i$$

$$12) \frac{(6 + 3i)}{(2 - 5i)} \cdot \frac{(2 + 5i)}{(2 + 5i)} =$$

$$\frac{12 + 30i + 6i + 15i^2}{4 + 10i - 10i - 25i^2}$$

$$\frac{12 + 36i + 15(-1)}{4 - 25(-1)}$$

$$\frac{-3 + 36i}{29}$$

$$-\frac{3}{29} + \frac{36i}{29}$$

$$\frac{-3}{29} + \frac{36i}{29}$$

$$12) a) \sqrt{-36}$$

6i

$$b) \sqrt{-75}$$

$\sqrt{25} \sqrt{3}$

$5i\sqrt{3}$

$$13) x^2 - 3x$$

$$\left(-\frac{3}{2}\right)^2$$

$$\boxed{\frac{9}{4}} \quad a)$$

$$14) -3x^2 + 12x - 7 < 0$$

$$-3x^2 + 12x = 7$$

$$-3(x^2 - 4x) = 7$$

$$-3(x^2 - 4x + 4) = 7 - 12$$

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

F

$$15) 2x^2 - 8x + 3 = 0 \quad \text{Q.F.}$$

$$a=2$$

$$b=-8$$

$$c=3$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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

$$x = \frac{8 \pm \sqrt{64 - 24}}{4}$$

$$x = \frac{8 \pm \sqrt{40}}{4}$$

$$x = \frac{8 \pm 2\sqrt{10}}{4}$$

$$x = \frac{4 \pm \sqrt{10}}{2} \quad \text{H}$$

$$x = \frac{8 \pm \sqrt{4 \cdot 10}}{4}$$

$$16) 3x^2 - 7x + 1 = 0$$

$$a = 3$$

$$b = -7$$

$$c = 1$$

$$b^2 - 4ac$$

$$(-7)^2 - 4(3)(1)$$

$$49 - 12$$

B

$$17) (5 + \sqrt{36}) - (-4 - \sqrt{49})$$

$$(5 + 6i) - (-4 - 7i)$$

$$9 + 13i$$

D

$$18) \frac{(5 + 3i)(4 + 2i)}{(4 - 2i)(4 + 2i)} = \frac{20 + 10i + 12i + 6i^2}{16 + 8i - 8i - 4i^2} = \frac{20 + 22i - 6}{16 + 4} = \frac{14 + 22i}{20}$$

$$= \frac{7}{10} + \frac{11i}{10}$$

A