

13) 118

$$15) (3+2i) + (5-3i) = 15-9i+10i-6i^2$$

$$15+1i-6(-1)$$

$$15+6+1i$$

$$21+1i$$

$$17) (-5+3i) - (6-i) = 30+5i-18i-3i^2$$

$$30+13i+3$$

$$33-13i$$

$$19) (-4+4i) + (6+i+9i) = -24+36i+44i+36i^2$$

$$-24-12i-36$$

$$-60-12i$$

$$20) (6-2i)(5) = 30-10i$$

$$24) (2+3i)(4-i) = 8-2i+12i-3i^2$$

$$8+10i+3$$

$$11+10i$$

$$32) \frac{2-3i}{4+3i} \cdot \frac{4-3i}{4-3i} = \frac{8+1i-12i+9i^2}{16-9i^2-1} = \frac{8-11i-9}{16+9} = \frac{-1-11i}{25}$$

14) 129

$$1) x^2 + 4x - 21 = 0$$

$$x^2 + 7x - 3x - 21 = 0$$

$$x(x+7) - 3(x+7) = 0$$

$$(x+7)(x-3) = 0$$

$$x+7=0$$

$$x-3=0$$

$$x = -7, x = 3$$

$$10) 4x^2 + 12x + 8 = 0 = 4x^2 + 12x + 4x^2 = 0 = 4(2+3x+x^2) = 0$$

$$4(2+3x) \cdot (1+x) = 0$$

$$2+3x=0 \Rightarrow x = -\frac{2}{3}$$

$$1+x=0 \Rightarrow x = -1$$

$$(x = -2, x = -1)$$

$$12) 8x^2 + 16x - 9 = 0 = -9 + 16x + 8x^2 = 0 = (3+2x)(3x-4) = 0$$

$$-3 + -2x = 0 \Rightarrow -4x = 0 - 3 \Rightarrow -4x = -3 \Rightarrow x = \frac{3}{4}$$

$$3x - 4 = 0 \Rightarrow 3x = 4 \Rightarrow x = \frac{4}{3}$$

$$x = -1.5$$

$$x = 0.75$$

$$21) \sqrt{20-11} = \sqrt{9}$$

$$x - 1 = 5$$

$$x = 6$$

$$20) 2x^2 - 8x - 5 = 0 = \frac{(-11) \pm \sqrt{121 - 4ac}}{2a}$$

$$x = \frac{8 \pm \sqrt{64 - 4(-5)(2)}}{4} = \frac{8 \pm \sqrt{64 + 40}}{4} = \frac{8 \pm \sqrt{104}}{4} = \frac{8 \pm 2\sqrt{26}}{4}$$

$$38) 2x^2 + 5x + 3 = 0 = \frac{-5 \pm \sqrt{25 - 4ac}}{2a}$$

$$= \frac{-5 \pm \sqrt{25 - 4 \cdot 2 \cdot 3}}{4} = \frac{-5 \pm \sqrt{25 - 24}}{4}$$

$$= \frac{-5 \pm 1}{4} \Rightarrow x = \frac{-5+1}{4} = -1, x = \frac{-5-1}{4} = -\frac{6}{4} = -\frac{3}{2}$$