

KEY

Answers

1. $x^2 - x - 12$

3. $3x^2 - x + 2$

5. $g(x) = (x+1)(x-4)(x^2 + 2x - 1)$

7. $x = 6, 4+i, 4-i$

2. $x^2 + 2x - 3$

4. $f(x) = (x+4)(2x^2 - 7x + 9)$

6. $x = -1, 3, 2i, -2i$

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Parent Guide with Extra Practice

8) $7-2i$ and $7+2i$

$$\begin{aligned}x &= 7-2i \\(x-7)^2 &= (-2i)^2 \\x^2 - 14x + 49 &= 4i^2 \\x^2 - 14x + 49 &= 4\end{aligned}$$

$$\boxed{x^2 - 14x + 53 = 0}$$

9) $4+5i$ and $4-5i$

$$\begin{aligned}x &= 4+5i \\(x-4)^2 &= (5i)^2 \\x^2 - 8x + 16 &= 25i^2 \\x^2 - 8x + 16 &= -25 \\x^2 - 8x + 41 &= 0\end{aligned}$$

10) $y = a(x+4)(x-1)(x-3)$

$$\begin{aligned}60 &= a(3)(-2)(-4) \\60 &= 24a\end{aligned}$$

$$\frac{60}{24} = a$$

$$\frac{10}{4} = a$$

$$\frac{5}{2} = a$$

$$\boxed{y = \frac{5}{2}(x+4)(x-1)(x-3)}$$

Name _____

Period _____

Complex Numbers

Evaluate. ANSWER KEY

1) $(4i)(-3i)$ 12	2) $7i - (-4i)$ 11i	6) $(5 - 2i) + (4 + 4i)$ $9 + 2i$
4) $(i)(2i)(-3i)$ 6i	5) $(7 + 2i) + (9 - 5i)$ $16 - 3i$	8) $(3 + 4i)(5 - 2i)$ $23 + 14i$
13) $(2 - i)(3 + 4i)$ $10 + 5i$	11) $(7 - 4i) - (-3 + 6i)$ $10 - 10i$	9) $(\sqrt{6} + i)(\sqrt{6} - i)$ 7
9) $-2i(\sqrt{5} + 3i)$ $6 - 10i$	14) $\frac{20}{4i}$ -5i	15) $\frac{6+5i}{-2i}$ $\frac{6i-5}{2}$
16) $\frac{3-i}{2-i}$ $\frac{7+i}{5}$	17) $\frac{2-4i}{1+3i}$ -1 - i	18) $\frac{2}{7-8i}$ $\frac{14+16i}{113}$