Name: _____ Period: _____ Date: _____

Operations with Complex Numbers Bell Work

Simplify.

1. $(10 + 2i) + (-11 + 2i)$

2. $(1 - i) - (1 + 2i)$

3. $(-1 + 4i) + (-3 - 4i)$

4. $(7 - 7i) - (12 - 3i)$

5. $\frac{2}{-1-i}$

6. $\frac{5+i}{2+i}$

7. $(2 + 3i)(1 + 2i)$

8. $(-11 - 4i)(3 - 2i)$

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Operations with Complex Numbers Bell Work

Answers

Simplify.

1. $(10+2i)+(-11+2i)$

$(10+(-11))+(2+2)i$

$(-1)+4i$

$=-1+4i$

2. $(1-i)-(1+2i)$

$=(1-1)+(-1-2)i$

$=0+(-3)i$

$=-3i$

3. $(-1+4i)+(-3-4i)$

$(-1+(-3))+(4-4)i$

$(-4)+0i$

$=-4$

4. $(7-7i)-(12-3i)$

$=(7-12)+(-7+3)i$

$=-5+(-4)i$

$=-5-4i$

5. $\frac{2}{-1-i}$

$\frac{2}{-1-i}\times\frac{-1+i}{-1+i}=\frac{2(-1+i)}{(-1)^2-i^2}$

$=\frac{-2+2i}{1-(-1)}=\frac{-2+2i}{2}=\frac{-2}{2}+\frac{2i}{2}$

$=-1+i$

6. $\frac{5+i}{2+i}$

$\frac{5+i}{2+i}\times\frac{2-i}{2-i}=\frac{(5+i)(2-i)}{2^2-i^2}=\frac{(10-(-1))+(5(-1)+1(1))i}{4-(-1)}$

$=\frac{11-4i}{5}=\frac{11}{5}-\frac{4i}{5}$

$=\frac{11}{5}-\frac{4i}{5}$

7. $(2+3i)(1+2i)$

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

$=(2-6)+(4+3)i$

$=-2+(7)i$

$=-2+7i$

8. $(-11-4i)(3-2i)$

$(-11(3)-(-4)(-2))+(-11(-2)+(-4)(3))i$

$=(-33-8)+(22-12)i$

$=-41+(10)i$

$=-41+10i$