Guidance document 7


Graphs and the absolute value of complex number
Learning outcomes. Deliberate write graph and find the absolute value of complex number in the form $\mathrm{a}+\mathrm{bi}$, or ( $\mathrm{a}, \mathrm{b}$ ) and the properties of the complex to use in solving the problem.
Intended destination Write graphs and find the absolute value of the complex by definition.

Name $\qquad$ Grade. $\qquad$ No $\qquad$
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Find the absolute value of the complex by definition.

| No | Problem | $\mathrm{Z}=\mathrm{a}+\mathrm{bi}$ | $\|z\|=\sqrt{a^{2}+b^{2}}$ |
| :---: | :---: | :---: | :---: |
| 1 | $z=3(2-6 i)-4(2+8 i)=(6-18 i)-(8+32 i)=-2-50 i$ | $Z=-2-50 i$ | $=\sqrt{2504}=2 \sqrt{626}$ |
| 2 | $Z=2 i(2-3 i)-3 i(-3+4 i)=(4 i+6)+(9 i+12)=18+13 i$ | $Z=18+13 i$ | $=\sqrt{493}$ |
| 3 | $z=(4-3 i)(2+i)=11-2 i$ | $Z=11-2 i$ | $=\sqrt{125}=5 \sqrt{5}$ |
| 4 | $Z=i(3-2 i)^{2}=i(5-12 i)=12+5 i$ | $\mathrm{Z}=12+5 \mathrm{i}$ | $=\sqrt{169}=13$ |
| 5 | $z=(3+2 i)^{3}$ | Z= |  |
| 6 | $Z=\frac{3+5 i}{-4 i}$ | Z= |  |
| 7 | $\mathrm{Z}=\frac{-14+23 i}{3+4 i}$ | Z= |  |
| 8 | $Z=\frac{8 i^{125}}{(2+\sqrt{5} i)^{2}}$ | $\mathrm{Z}=$ |  |
| 9 | $z^{3}=-4 i^{140}+3 i^{51}$ | $z^{3}=$ |  |
| 10 | $z^{2}=\frac{2+i}{2-i}+\frac{3+4 i}{1+2 i}$ | $z^{2}=$ |  |



Summary score
Score 10 points made $\qquad$ points
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