Name _____   Date _____

Year Group _____

Convert the following complex numbers in standard to trigonometric form and plot the point. Show all steps. Answers $0° \leq \theta \leq 360°$. Round to the nearest tenth.

1. $3 + 2i$ ⬤

$$r = \sqrt{a^2 + b^2} \qquad\qquad tan\theta = \frac{b}{a}$$

Steps => $r = \sqrt{\underline{\quad}^2 + \underline{\quad}^2}$ Steps => $tan\theta = \dfrac{\underline{\quad}}{\underline{\quad}}$

Steps => $r = \sqrt{\underline{\quad} + \underline{\quad}}$ Steps => $\theta = tan^{-1}\left(\dfrac{\underline{\quad}}{\underline{\quad}}\right)$

Steps => $r = \sqrt{\underline{\quad}}$ Steps => $\theta = \underline{\quad}°$

Answer => $\underline{\quad}\sqrt{\underline{\quad}} * [\cos(\underline{\quad}°) + i * \sin(\underline{\quad}°)]$
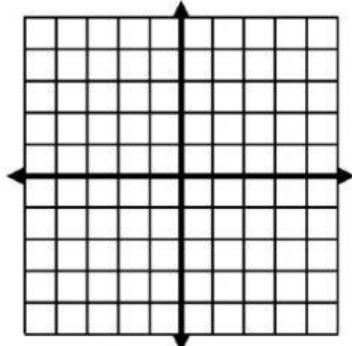
Convert the following complex numbers in standard to trigonometric form and plot the point. Answers $0° \leq \theta \leq 360°$. Round to the nearest tenth.

2. $5 - 3i$ ⬤

Answer => $\underline{\quad}\sqrt{\underline{\quad}} * [\cos(\underline{\quad}°) + i * \sin(\underline{\quad}°)]$

3. $-4 + 5i$ ⬤

Answer => $\underline{\quad}\sqrt{\underline{\quad}} * [\cos(\underline{\quad}°) + i * \sin(\underline{\quad}°)]$

4. $-3 - 3i$ ⬤

Answer => $\underline{\quad}\sqrt{\underline{\quad}} * [\cos(\underline{\quad}°) + i * \sin(\underline{\quad}°)]$

5. $-3\sqrt{2} + 4i$ ⬤

Answer => $\underline{\quad}\sqrt{\underline{\quad}} * [\cos(\underline{\quad}°) + i * \sin(\underline{\quad}°)]$