$$z = \frac{1}{2}\left(\cos\frac{\pi}{4} + i\sin\frac{\pi}{4}\right)$$

$$z = \frac{1}{2}\left(\frac{\sqrt{2}}{2} + i \times \frac{\sqrt{2}}{2}\right)$$

$$z = \frac{1}{2} \times \frac{\sqrt{2}}{2} + i \times \frac{\sqrt{2}}{2} \times \frac{1}{2}$$

$$z = \frac{\sqrt{2}}{4} + i\,\frac{\sqrt{2}}{4}$$

$\overrightarrow{AC}\begin{pmatrix} x_C - x_A \\ y_C - y_A \end{pmatrix}$

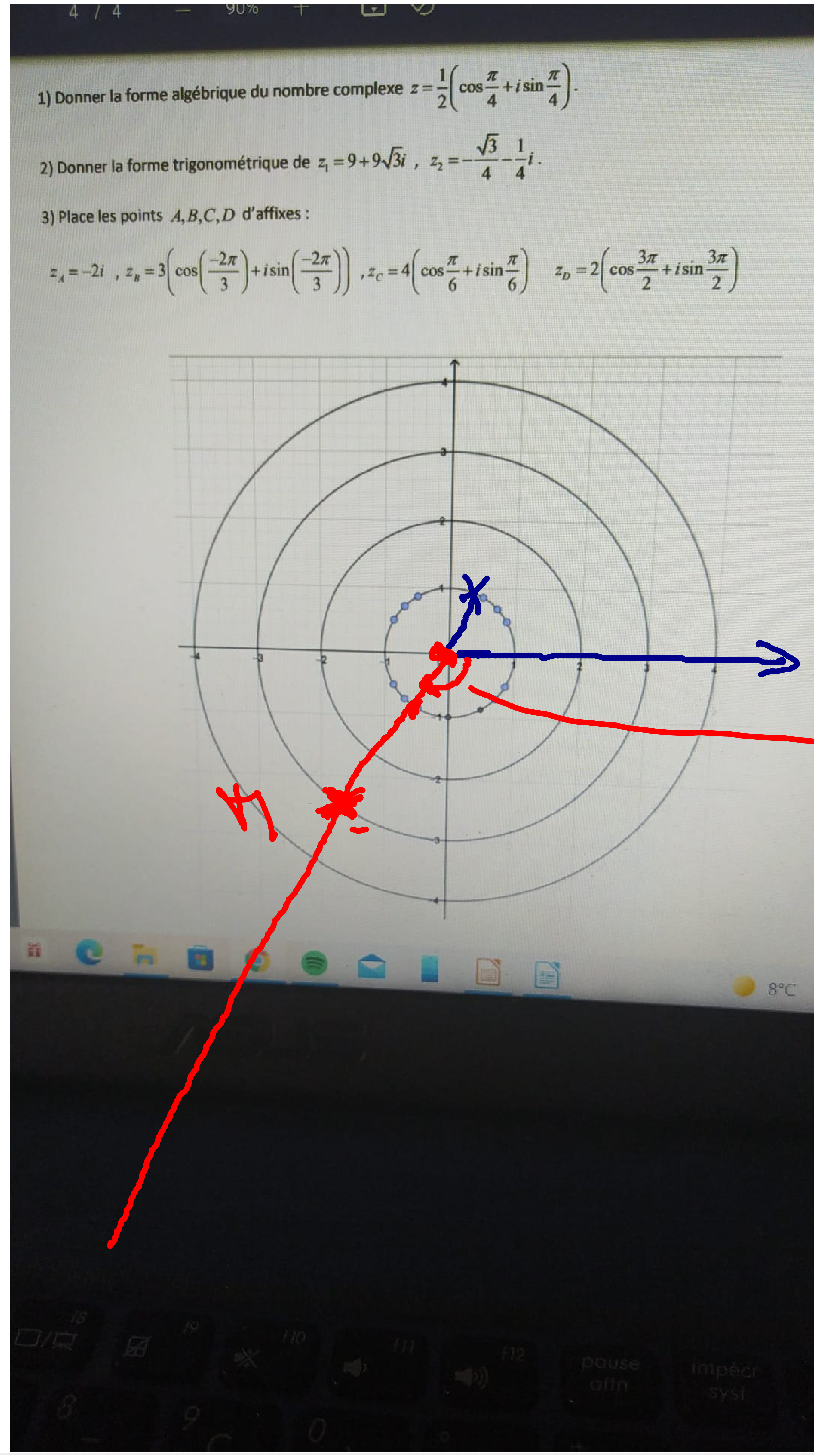
$z_A = 4 + 5i$

$z_C = 6 - 3i$

Affixe de $\overrightarrow{AC}$ est $z_C - z_A$

$$z_C - z_A = 6 - 3i - (4 + 5i)$$
$$= 6 - 3i - 4 - 5i$$
$$= 2 - 8i$$

$z = \boxed{3}\left(\cos\left(-\frac{2\pi}{3}\right) + i \sin\left(-\frac{2\pi}{3}\right)\right)$



1) Donner la forme algébrique du nombre complexe $z = \frac{1}{2}\left(\cos\frac{\pi}{4} + i\sin\frac{\pi}{4}\right)$.

2) Donner la forme trigonométrique de $z_1 = 9 + 9\sqrt{3}i$, $z_2 = -\frac{\sqrt{3}}{4} - \frac{1}{4}i$.

3) Place les points A, B, C, D d'affixes :

$z_A = -2i$, $z_B = 3\left(\cos\left(\frac{-2\pi}{3}\right) + i\sin\left(\frac{-2\pi}{3}\right)\right)$, $z_C = 4\left(\cos\frac{\pi}{6} + i\sin\frac{\pi}{6}\right)$ $z_D = 2\left(\cos\frac{3\pi}{2} + i\sin\frac{3\pi}{2}\right)$

M

$\to -\frac{2\pi}{3}$

$$f(x) = -\frac{1}{2}x + \frac{1}{4}$$

$$f'(x) = -\frac{1}{2}$$

$$f(x) = -\frac{1}{3}x^3 + \frac{1}{2}x^2 + 5x - 1$$

$$f'(x) = -\frac{1}{3} \times 3x^2 + \frac{1}{2} \times 2x + 5$$

$$= -\frac{3}{3}x^2 + \frac{2}{2}x + 5$$

$$= -x^2 + x + 5$$

$A(z_A) \qquad z_A = 3i - 5$

$B(z_B) \qquad z_B = 10 - 2i$

$|z_A| = \sqrt{(-5)^2 + 3^2} = \sqrt{25+9} = \sqrt{34}$

$|z_B| = \sqrt{10^2 + (-2)^2} = \sqrt{100+4} = 2\sqrt{26}$

$\overrightarrow{AB}(z_{\overrightarrow{AB}}) = z_B - z_A = (10 - 2i) - (3i - 5)$

$= 10 - 2i - 3i + 5$

$= 15 - 5i$

$$z_D = 4\left(\cos\left(-\frac{\pi}{6}\right) + i\sin\left(-\frac{\pi}{6}\right)\right)$$

$$= 4\left(\frac{\sqrt{3}}{2} + i\,\frac{-1}{2}\right)$$

$$= \frac{4(\sqrt{3})}{2} - \frac{4}{2}i$$

$$z_D = 2\sqrt{3} - 2i$$