

JEE MAIN COMPLEX NUMBERS AND QUADRATIC EQUATIONS — COMPLEX NUMBERS AND ALGEBRA OF COMPLEX NUMBERS — PYQS

Max. Marks: 12
Questions: 3

Section A (MCQ) — 3 questions

Q.1 Let x and y be real numbers such that $50\left(\frac{2x}{1+3i} - \frac{y}{1-2i}\right) = 31 + 17i$, $i = \sqrt{-1}$. Then the value of $10(x-3y)$ is :

[JEE Main 2026 (Online) 2nd April Morning Shift]

- (1) 20 (2) 31 (3) 35 (4) 75

Scan or tap for the
full solution



Q.2 Let $A = \left\{ \theta \in [0, 2\pi] : 1 + 10 \operatorname{Re} \left(\frac{2\cos\theta + i\sin\theta}{\cos\theta - 3i\sin\theta} \right) = 0 \right\}$. Then $\sum_{\theta \in A} \theta^2$ is equal to

[JEE Main 2025 (Online) 8th April Evening Shift]

- (1) $\frac{21}{4}\pi^2$ (2) $6\pi^2$ (3) $\frac{27}{4}\pi^2$ (4) $8\pi^2$

Scan or tap for the
full solution



Q.3 Let the product of $\omega_1 = (8+i)\sin\theta + (7+4i)\cos\theta$ and $\omega_2 = (1+8i)\sin\theta + (4+7i)\cos\theta$ be $\alpha + i\beta$, $i = \sqrt{-1}$. Let p and q be the maximum and the minimum values of $\alpha + \beta$ respectively. Then $p + q$ is equal to :

[JEE Main 2025 (Online) 4th April Evening Shift]

- (1) 130 (2) 150 (3) 160 (4) 140

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full solution



ANSWER KEY

Ques.	1	2	3								
Ans.	4	1	1								