

Aim: How do we prepare for the college placement exam(LIU)?

Get Ready: Begin Placement Practice Exam

1. Divide  $\frac{25b^2 - 36}{b^2 + 4ab + 4a^2}$  by  $\frac{5b + 6}{2a + b}$

5.  $\frac{3}{x^2 - 4} = \frac{2}{x + 2} + \frac{5}{x - 2}$

2. Divide  $x^5 + 32$  by  $x + 2$

6.  $\sqrt{2x + 2} - \sqrt{x + 2} = 1$

3. Write  $\frac{5 - 2i}{3 + 2i}$  in  $a + bi$  form

7.  $\log_4 x = -\frac{3}{2}$

4.  $\begin{cases} 3x + 8y = 5 \\ x - 4y = 6 \end{cases}$  Solve for  $x$  &  $y$ .

8. Factor out the GCF:  $3x^4y^3 - 15x^3y^3 - 18x^2y^5$

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9. Simplify

$$\frac{\frac{a}{b^2} - \frac{2b}{a}}{\frac{1}{b^2} - \frac{1}{2a}}$$

12. The perimeter of a rectangle is 228 ft. The width is 42 feet less than the length. Find the dimensions.

10. Compute:

a.  $\cos \frac{5\pi}{4}$     b.  $\tan \frac{7\pi}{4}$     c.  $\sin 3\pi$     d.  $\cot \frac{2\pi}{3}$

13. Rationalize the denominator:

$$\frac{2\sqrt{5} - 3\sqrt{2}}{2\sqrt{5} + 3\sqrt{2}}$$

11. Find the length and midpoint of a line segment whose endpoints are  $(-2,5)$  and  $(-4,7)$

14. Simplify:

a.  $\left(\frac{2x^2y^{-2}}{3x^8y^7}\right)^9$     b.  $\frac{p^{\frac{3}{4}}q^{-\frac{2}{3}}}{p^{\frac{7}{8}}q^{-\frac{3}{4}}}$