

SAMPLE PLACEMENT TEST TO BYPASS MATH 0300 AND MATH 1300

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All students who have no college mathematics credit are required to take a mathematics placement test. The score on this test is used to determine the math course in which a student should be placed. Students who score well enough on this test will be allowed to bypass Math 0300 and Math 1300, and enroll in Math 1301 or in Math 1310, whichever is required for their degree plan. Students will also be allowed to try to bypass Math 1301, if they wish. Those who score well enough to bypass Math 1301 may try a more advanced bypass test. Sample tests to bypass Math 1301, Math 1302, and Math 1404 are available in Room 705-South.

The Placement Test will have all multiple choice questions. Here only the first question is in multiple choice form as an example.

1. A factor of $x^2 - x - 12$ is: A. $x + 4$ B. $x - 3$ C. $x - 12$ D. $x - 4$ E. $x + 2$
2. Find the least common denominator for $\frac{3}{5}$, $\frac{1}{2}$, and $\frac{2}{3}$.

In problems 3 – 12, perform the indicated operations and simplify, if possible.

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| 3. $\frac{2}{3} - \frac{5}{6}$ | 4. $0 \div 3$ |
| 5. $3 \div 0$ | 6. $6 + 4 \cdot 5$ |
| 7. $4 + 8 \div (4 - 2)$ | 8. $(x^3 - 2x^2y + xy^2) + (2xy^2 - x^2y - y^3)$ |
| 9. $(2x + y) - (-4x + y)$ | 10. $(-2xz^2)(6x^3y^2z^2)$ |
| 11. $3(x^2 + 2xy + xz) - 2x(3x + 2y - z)$ | 12. $(2x - 3)(x + 6)$ |
| 13. Evaluate the following expression when $x = 2$, $y = -3$, and $z = -1$: $\frac{2y^2 - xyz}{x^2yz}$. | |

In problems 14 – 17, factor completely the given expression.

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| 14. $x^2 - 5x - 6$ | 15. $x^2 - 25$ |
| 16. $a^3 + 8$ | 17. $6x^4y - 20x^3y - 16x^2y$ |
| 18. Express 180 as the product of prime numbers. | |

In problems 19 – 25, perform the indicated operations and simplify, if possible.

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| 19. $\frac{a^2 - 9}{a^2 + 5a + 6} \cdot \frac{a^2 - 4}{a^2 - 4a + 3}$ | 20. $\frac{a^2 - 3a + 2}{a^2 - 1} \div \frac{2a^2 - 4a}{a^2 + a}$ |
| 21. $\frac{4x^3 - 6x^2 + 2x}{2x}$ | 22. $\frac{3}{4a} + \frac{1}{2a^2}$ |
| 23. $(2x^2 + 7x + 5) \div (x + 3)$ | 24. $\frac{4x - 4}{x^2 - 4x + 3} - \frac{2}{x - 3}$ |
| 25. $\frac{\frac{1}{a} + \frac{1}{b}}{\frac{1}{ab}}$ | |

In problems 26 – 30, solve the given equations.

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| 26. $2(x + 2) = 5 + 3(2x - 1)$ | 27. $\frac{2}{3}x = 10$ |
| 28. $\frac{2}{x} + \frac{3}{5} = \frac{8}{x}$ | 29. $\frac{x - 9}{x - 3} + 3 = \frac{6}{x - 3}$ |
| 30. $x^2 + x = 6$ | |

