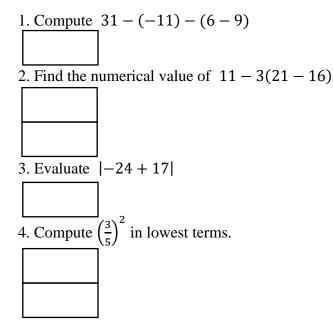
Practice Materials for the Math Placement Exam

You should be able to do this practice exam without the use of a calculator. The exam format is similar to how questions are asked here and answers must be typed in the boxes provided. Only numbers and the negative sign "-" are acceptable in the answer boxes (no special formatting, no decimals, no letters). When checking your answers to this practice exam, your answer must match exactly to be correct. *These are NOT the exact problems from the exam.



5. Add the following fractions and express your answer as a fully reduced fraction: $\frac{2}{3} + \frac{5}{11}$

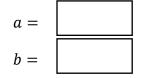


6. Divide the following fractions and express your answer as a fully reduced fraction: $\frac{13}{5} \div \frac{10}{3}$



7. Simplify: $\left(\frac{1}{2} \cdot \frac{-4}{5}\right) + \left(\frac{-1}{3} \cdot \frac{3}{4}\right)$

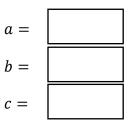
8. Simplify the expression 4(3x + 1) - (2x - 6) to one of the form ax + b.



9. Solve for *x*: 5x + 2 = -3x + 4



10. Simplify the expression $(3x^2 + 2x - 3) (4x^2 - 2x - 6)$ to one of the form $ax^2 + bx + c$. Write your answers for *a*, *b*, and *c*.

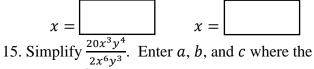


11. Calculate the slope of the line going through the points (-5, 6) and (2, 3).

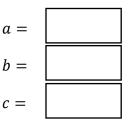
12. Solve for x:
$$2(x - 3) = 1 - 4(2x + 5)$$

13. Evaluate $x^2 - 2x + 6$ for $x = -1$.

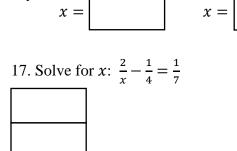
14. Solve for x: $x^2 - 11x = -28$. Enter your answers in any order.



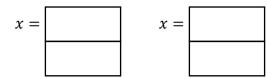
answer is $ax^b y^c$.



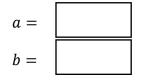
16. Find the two roots x_1 and x_2 of the quadratic equation $x^2 - 8x + 12 = 0$. Enter your answers in any order.



18. Solve for x: |4x + 1| + 3 = 6. Enter your answers in any order.



19. If f(x) = -3x + 7, calculate and simplify $\frac{f(4+h)-f(4)}{h}$. Enter the values of *a* and *b*, where your answer is in the form ah + b.



20. The graph of $y = \frac{1}{x+2} + 9$ is the graph of $y = \frac{1}{x}$ with what transformations?

- (a) shifted left 9 units and down 2 units
- (b) shifted left 2 units and up 9 units
- (c) shifted left 2 units and down 9 units
- (d) shifted right 2 units and up 9 units
- (e) shifted left 9 units and up 2 units

21. A right triangle has sides A, B, and C, where C is the hypotenuse. Side A has length 18, side B has length 24, and side C has length 30. If θ is the angle between sides A and C, what is the value of sin (θ)? Enter your answer as a fully simplified fraction.

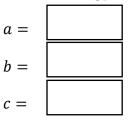
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22. Which of the following is the inverse of $f(x) = (x - 10)^3$?

(a)
$$f^{-1}(x) = (x - 10)^{\frac{1}{3}}$$

(b) $f^{-1}(x) = (x - 10)^{\frac{1}{3}} + 10$
(c) $f^{-1}(x) = x^{\frac{1}{3}} - 10$
(d) $f^{-1}(x) = x^{\frac{1}{3}} + 10$
(e) $f^{-1}(x) = x^{3} + 10$

23. Solve for x: $7^{x+6} = 2$. Enter a, b, and c where your answer is $x = \log_b a + c$.



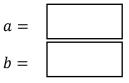
<u>24. Evaluate $\ln(e^{43})$.</u>

25. Find the equation of the curve formed by

vertically stretching the graph of $y = \sin(x)$ by 2 and then shifting it right by 7 units. Enter a, b, c, and d where your answer is $y = a\sin(bx + c) + d$.

<i>a</i> =	
<i>b</i> =	
<i>c</i> =	
d =	

26. Use the method of completing the square to write $x^2 + 6x - 2$ in the form $(x + a)^2 + b$.



$$1.45 \ 2.\frac{-4}{1} \ 3.7 \ 4.\frac{9}{25} \ 5.\frac{37}{33} \ 6.\frac{39}{50} \ 7.\frac{13}{10} \ 8.\frac{a=10}{b=10} \ 9.\frac{1}{4} \ 10.\frac{a=-1}{b=\frac{4}{c=3}} \ 11.\frac{-3}{7} \ 12.\frac{-13}{10} \ 13.9 \ 14.x=4 \ x=7 \ 15.\frac{a=10}{b=-3} \ \frac{a=10}{c=1} \ 16.x=6 \ x=2 \ 17.\frac{56}{11} \ 18.\frac{x=-1}{1} \ x=\frac{1}{2} \ 19.\frac{a=0}{b=-3} \ 20.(b) \ 21.\frac{4}{5} \ 22.(d) \ 23.\frac{b=7}{c=6} \ 24.43 \ 25.\frac{b=1}{c=1} \ 26.\frac{a=3}{b=-11} \ \frac{a=3}{c=1} \ \frac{a=0}{c=0} \ 26.\frac{a=3}{b=-11} \ \frac{a=0}{d=0} \ 26.\frac{a=1}{b=-11} \ \frac{a=0}{d=0} \ 26.\frac{a=1}{b=-11} \ \frac{a=0}{d=0} \ 26.\frac{a=1}{b=-11} \ 26.\frac$$