Name (printed legibly):

Directions: The quiz contains 20 problems, and each problem is worth one point. Place your answer in the blank provided. For graphing questions, a set of axes are provided. **Calculators are not allowed.**

For this quiz only, no partial credit will be given.

Please circle your instructor: Leah Berman (10:30-11:30)   Jill Faudree (9:15-10:15)
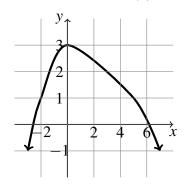
1. Evaluate $9^{-3/2}$.

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2. Find the exact value of $\log_2\left(\dfrac{1}{8}\right)$.

   _____

3. Find the exact value of $\cos\left(\dfrac{5\pi}{3}\right)$.

   _____

4. Simplify the expression $\left(\dfrac{5x^2y}{x^5y^{7/2}}\right)^2$. Write your answer without negative exponents.

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5. Write an equation in slope-intercept form $y = mx + b$ for the line that passes through the points $(-7,3)$ and $(-9,-3)$.

   _____

6. Expand and simplify $(5x+1)^2 - 4(x-7)$.

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7. Use the graph of $f(x)$ below to estimate the value(s) of x such that $f(x) = 1$.

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8. For the function $f(x) = \frac{5}{x}$, find the expression $f(12+h) - f(12)$. Simplify your answer and write your answer as a single fraction.

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9. Given the piecewise defined function below, determine the value(s) of x such that $f(x) = -20$.

$$f(x) = \begin{cases} 2x+7 & x < 0 \\ x^3 & x \geq 0 \end{cases}.$$

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10. Solve for x in the equation $x^2 + 5x = 14$.

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11. Solve for x in the equation $e^{4-7x} = \frac{1}{3}$.

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12. Find all solutions to the equation $2\sin(\theta) = 1$ in the interval $[0, 2\pi]$.
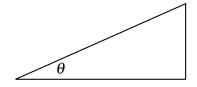
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13. A table of values for the function $f(x)$ is given below. Use the table to determine $f^{-1}(2)$.

x	-2	0	2	4	6	8	10	12	14
$f(x)$	20	8	4	-2	6	10	2	-3	-1/3

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14. Solve the inequality $36 - x^2 \leq 0$. Give your answer in interval notation.

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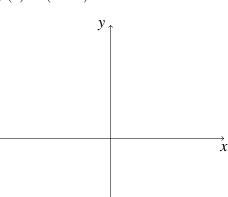
15. Determine the domain of $f(x) = \ln(x+3)$. Give your answer in interval notation.

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16. In the triangle below, $\sin\theta = \frac{2}{5}$. Determine $\tan\theta$.

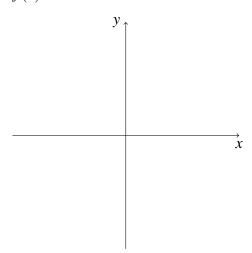   _____

Sketch graphs of the following functions. Label the *x*- and *y*-intercepts, if they exist. Draw in any asymptotes using dashed lines, and write the equation of the asymptote, if it exists.
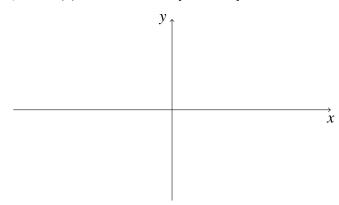
17. $f(x) = (x+1)^3$

18. $f(x) = e^x - 2$

19. $y = \sin(x)$ on the interval $[-2\pi, 2\pi]$

20. Given the graph of $f(x)$ below, draw the graph of $-2f(x)$.