MMPT

MISSOURI MATHEMATICS PLACEMENT TEST – PRACTICE TEST

1. Add: $2\frac{3}{4}+4\frac{1}{3}$

2. Convert 0.475 to a fraction in lowest terms.

3. Convert $\frac{4}{25}$ to a decimal.

4. What is the average of the following numbers: $\frac{1}{3},\frac{4}{5},\frac{9}{10}$?

5. What is 35% of 70?

6. What percent of 3000 is 360?

7. After a 40% reduction in price a CD player costs $90. What was the original price?

8. What is the next number in the sequence: 1, 8, 15, 22, ____ ?

9. One mile is approximately 1.6 kilometers. Approximately how many miles are equivalent to 80 kilometers.

10. If a small airplane can travel 525 miles in $3\frac{1}{4}$ hours, find its average speed to the nearest mile/hour.

11. A farmer sells a mixture of wild bird feed in 50 pound bags. If 15% of the mixture is sunflower seeds, how many pounds of sun flower seeds will he need to make 100 bags?

12. Simplify: $\frac{3\sqrt{8}-2\sqrt{32}}{5\sqrt{18}}$.

13. Write in expanded form: 2.15 x 10^{-3}

14. What is the value of $2x^2-3x+5$ if x equals –2?

15. Use the formula P = 2L + 2W to find L if P = 38 and W = 7.

16. Solve for y: $ax+by=c$

17. Multiply: $(x^2-2x-3)(x-2)$

18. Expand: $(a-b)^3$

19. Factor: x^2-x-42.

20. Simplify: $\frac{\frac{a}{b}+\frac{b}{a}}{\frac{a}{b}-\frac{b}{a}}$

21. Subtract and simplify: $\frac{y+1}{y-1}-\frac{y-1}{y+1}$.

22. Simplify: $\left[\frac{2}{3}\right]^{-3}$

23. Simplify: $x^{-3}+x^{-1}$

24. Simplify: $\frac{y^2-x^{-2}}{y-x^{-1}}$

25. Solve for x: $\frac{1}{x}=\frac{1}{a}-\frac{1}{b}$.

26. Solve for x: $\frac{6}{x^2-1}-\frac{1}{2}=\frac{1}{x+1}$

27. Solve for x: $(x + 1)(x + 2) = 12$.

28. What is the larger root of $\frac{1}{5}x^2=\frac{1}{3}x+\frac{2}{15}$?

29. Identify the number and kind of roots for the equation $3x^2-5x+4=0$.

30. Find the roots of $3x^2-2x+3=0$.

31. Solve for x: $-2x < 8$.

32. Solve for x: $2x + 10 < 7x - 5$

33. Identify the slope and y-intercept of the line given by the equation $3x – 4y = 6$.

34. Find the x-intercept and the y-intercept of the line given by the equation $y = 2x + 10$?

35. Multiply the following complex numbers and write the product in standard form: $(4 – 3i)(5 – 2i)$.

36. For what real values of x is the function $f(x)=\frac{x+1}{x^2-9}$ defined?

37. Find the value of $f(-\frac{1}{3})$ if $f(x)=8^x$.

38. Identify the graph of $f(x)=2^{-x}$.

39. Find the value of x when the following system of equations is solved simultaneously: $2x + 3y = 10$ and $–2x – 8y = 5$.

40. Find N if $\log_5 N=3$.

41. If $\log_a 15=2.708$ and $\log_a 5=1.609$, find $\log_a 9$.

42. Evaluate the determinant: $\begin{vmatrix} 2 & -1 & 4 \\ 1 & 3 & -2 \\ 4 & 5 & 0 \end{vmatrix}$

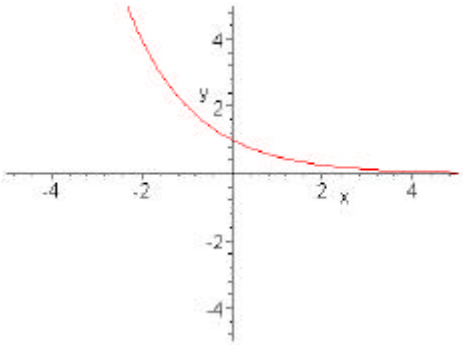
43. Find the third term in the expansion of $(2x-3y)^8$.

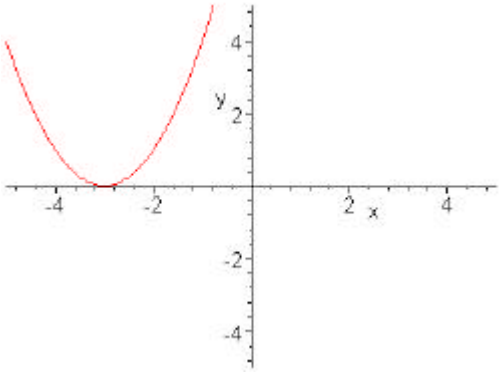
44. Graph: $y=x^2+6x+9$.

45. A coffee shop owner tried to make his own special blend of coffee by adding a percentage of Colombian coffee to his basic grind. After experimenting he decided that a 30% blend was best. However, he was left with a supply of 20% and a supply of 50% Colombian blends. How many pounds of the 20% blend would he have to add to the 50% blend to wind up with 100 pounds of the 30% blend?

You can get help with these problems in the Math Lab located in 425 SSB.

Answers for MMPT Practice Test

1. $7\frac{1}{12}$
2. $\frac{19}{40}$
3. 0.16
4. $\frac{61}{90}$
5. 24.5
6. 12%
7. $150
8. 29
9. 50 miles
10. 162 mph
11. 750 pounds
12. $\frac{-2}{15}$
13. 0.00215
14. 19
15. 12
16. $y = \frac{-ax + c}{b}$
17. $x^3 - 4x^2 + x + 6$
18. $a^3 - 3a^2b + 3ab^2 - b^3$.
19. $(x+6)(x-7)$
20. $\frac{a^2 + b^2}{a^2 - b^2}$
21. $\frac{4y}{y^2 - 1}$
22. $\frac{27}{8}$
23. $\frac{1 + x^2}{x^3}$
24. $\frac{xy + 1}{x}$
25. $\frac{ab}{b - a}$
26. –5 or 3
27. –5, 2
28. 2
29. 2, complex
30. $\frac{1 \pm 2i\sqrt{2}}{3}$
31. $x > -4$
32. $x > 3$
33. $\mathrm{m} = \frac{3}{4}$, y-intercept is $(0, \frac{-3}{2})$
34. x-intercept: (-5, 0); y-intercept: (0,10)
35. $14 - 23i$
36. All real numbers except 3 and -3
37. $\frac{1}{2}$
38. 

39. $x = \frac{19}{2}$
40. N = 125
41. 2.198
42. 0
43. $28(2x)^6(3y)^2 \; or \; 16{,}128x^6y^2$
44. 

45. $\frac{200}{3}$ pounds