



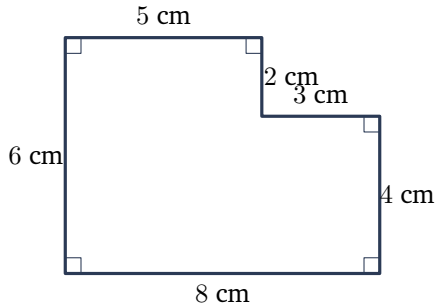
MATH 110 Diagnostic Exam

General Education Math • Fall 2026

1. A dietitian spends \$8.40 for 3 pounds of fruit and \$9.60 for 2 pounds of vegetables. Approximate the average cost per pound spent on the fruits and vegetables.
 - a) \$3.60
 - b) \$4.80
 - c) \$2.80
 - d) \$9.00
2. Simplify the following expression:
 $-3 - 4(x - 2) + 6$
 - a) $-4x - 1$
 - b) $-4x + 11$
 - c) $-4x + 5$
 - d) $4x + 11$
3. Solve for x : $3(2x - 1) - 2(x + 4) = 9$.
 - a) 3
 - b) 4
 - c) 6
 - d) 5
4. An event coordinator has a budget of \$750. She spends \$90 on decorations and \$60 on invitations. What percent of her budget does she have left?
 - a) 20%
 - b) 8%
 - c) 75%
 - d) 80%
5. 1,450 m is equal to how many km?
 - a) 145,000
 - b) 1,450,000
 - c) 14.5
 - d) 1.45
6. Jessica is wrapping a gift in a rectangular box. The box is 12 inches long, 7 inches wide, and 4 inches tall. How much gift wrapping paper will she need to cover the box?
 - a) 336 in^2
 - b) 160 in^2
 - c) 46 in^2
 - d) 320 in^2
7. 6 gallons are equal to how many fluid ounces?
 - a) 768
 - b) 96
 - c) 48
 - d) 672
8. Write 0.845 as a fraction.
 - a) $\frac{845}{100}$
 - b) $\frac{845}{1000}$
 - c) $\frac{169}{200}$
 - d) $\frac{169}{200}$
9. What is $\frac{13}{8}$ as a decimal?
 - a) 1.625
 - b) 1.375
 - c) 0.615
 - d) 1.38
10. If 15 US dollars is equivalent to 240 Mexican pesos, how many pesos would you get for 135 US dollars?
 - a) 8.44
 - b) 2,160
 - c) 3,600
 - d) 2,025

11. A clinic's patient count grew by $\frac{1}{8}$ in 2024, and in 2025 it grew by another $\frac{2}{9}$ from the 2024 count. If in 2023 the count was 144,000 patients, what has it become in 2025?
- 162,000
 - 180,000
 - 198,000
 - 176,000
12. A family's meal costs \$86.40. The restaurant adds an 8% service fee, and the family leaves a 15% tip on the bill *after* the service fee. What is the final total of the bill?
- \$107.31
 - \$105.62
 - \$93.31
 - \$106.99
13. After losing 40% of its fluid, an IV bag contains 900 mL. How much fluid did the bag contain before the loss?
- 1,260 mL
 - 540 mL
 - 1,500 mL
 - 1,350 mL
14. Order from least to greatest: $-\frac{5}{6}$, $\frac{1}{8}$, $\frac{1}{2}$, $-\frac{1}{9}$.
15. 15 centimeters is equal to how many inches? Round to the nearest hundredth. Use 1 in = 2.54 cm.
- 38.10
 - 5.31
 - 5.91
 - 6.35
16. In 4 hours, an IV pump delivers 12 doses. At the same rate, how many doses does it deliver in 18 hours?
- 72
 - 54
 - 24
 - 48
17. Evaluate: $72.415 - 8 - 3.62$.
- 60.815
 - 60.795
 - 61.795
 - 60.79
18. What is the largest number that still rounds to 76 when rounded to the nearest whole number?
- 76.61
 - 76.49
 - 75.42
 - 76.28
19. A cylindrical container has a radius of 5 in and a height of 12 in. If it is only one-half full, what is the volume of liquid inside it?
- $$V = \pi \cdot r^2 \cdot h$$
- Use 3.14 for π .
- 471 in³
 - 942 in³
 - 235.5 in²
 - 188.4 in³
20. $2x + 5y = 16$
 $3x - 2y = 5$
What are the values of x and y ?
- $x = 2$ and $y = 3$
 - $x = 3$ and $y = -2$
 - $x = -2$ and $y = 4$
 - $x = 3$ and $y = 2$
21. Order from least to greatest: 2.3, $-1\frac{4}{5}$, $\frac{11}{5}$, -190%.
22. Maria has 2.5 times as many patients on her roster as Tom. Tom has 12 patients. Nina has 0.5 times as many patients as Maria. How many patients does Nina have?
23. If two even numbers are added to an odd number, and that result is multiplied by an odd number, which of the following could be the result?
- Please select all that apply.
- 147
 - 210
 - 89
 - 64
 - 33

24. Convert 22.5°C into $^{\circ}\text{F}$. Use $F = 1.8 \cdot C + 32$.
- 40.5°F
 - 60.5°F
 - 72.5°F
 - 72.05°F
25. 0.72 kg is equal to _____ g.
26. What is the area of the following shape?



- 48 cm^2
 - 32 cm^2
 - 42 cm^2
 - 38 cm^2
27. The table below shows the scores of 5 students on an exam.
- | Student | Score (out of 100) |
|---------|--------------------|
| Ana | 74 |
| Ben | 82 |
| Cruz | 95 |
| Dana | 61 |
| Eli | 68 |
- Which of the following statements correctly describe the data above? Please select all that apply.
- The mean is greater than the median for this data.
 - The median is greater than the mean for this data.
 - The range is greater than half of the mean for this data.
 - The mean is equal to the median for this data.
 - There is no mode for this data.
28. A patient weighs 84 pounds. What is the patient's weight in kilograms? Round to the nearest hundredth if necessary.
- 38.18
 - 184.80
 - 37.80
 - 42.00
29. Exam-prep books cost \$7.50 each and lab kits cost \$15 each. Devon has \$90 to spend. Write an inequality that gives the combinations of books b and lab kits k that Devon can buy.
- $7.50b + 15k > 90$
 - $7.50b + 15k \geq 90$
 - $7.50b + 15k \leq 90$
 - $7.50b + 15k < 90$
30. Over a 3-day conference a pharmacist logs an unknown number x of prescriptions on the first day. She logs twelve more than that on the second day, and eighteen fewer than the first day on the third day. Which of the following expressions represents the total number of prescriptions over the 3 days?
- $3x + 6$
 - $3x - 6$
 - $3x - 30$
 - $3x + 30$
31. What is the area of a circle with a radius of 7 in? Use 3.14 for π .
- 43.96 in^2
 - 153.86 in^2
 - 21.98 in^2
 - 307.72 in^2
32. The scale on a floor plan is 1.5 in : 4 ft. A hallway is 18 inches long on the floor plan. What is the actual length of the hallway?
- 48 ft
 - 48 in
 - 12 ft
 - 27 ft
33. Simplify: $3(5^2 - 5) \div 4 + 2$.
- 15
 - 62
 - 17
 - 11

- 34.** A cohort of 18 nursing students receives a \$6,480 grant to share equally. Each student then agrees to donate \$75 to a scholarship fund, spend \$95 on textbooks, and set aside \$40 for supplies. How much money does each student have left?
Please do not include the dollar sign in your answer.
- 35.** Evaluate: $2\frac{3}{4} \cdot 1\frac{1}{3}$.
- a) $2\frac{1}{4}$
 - b) $3\frac{1}{3}$
 - c) $2\frac{3}{12}$
 - d) $3\frac{2}{3}$
- 36.** Solve for x : $5x - 14 \geq 8x + 4$.
- a) $x \leq -6$
 - b) $x \geq -6$
 - c) $x \leq 6$
 - d) $x \geq 6$
- 37.** Evaluate: $1\frac{2}{5} + 2\frac{7}{10}$.
- a) $3\frac{9}{15}$
 - b) $4\frac{1}{5}$
 - c) $3\frac{1}{10}$
 - d) $4\frac{1}{10}$

End of diagnostic — 37 problems.