SECTION C: PERT MATH SIMULATIONS

Welcome to the third simulation section of Part Two. The next four full-length practice exams are built to mirror the PERT Math placement test — Florida's state-mandated college placement assessment. If you are attending any institution in the Florida College System, the PERT is almost certainly the test that will determine which math course you enroll in during your first semester, and the score you earn will shape how many tuition dollars and how many semesters stand between you and graduation.

About the Official PERT Math Exam

PERT stands for the **Postsecondary Education Readiness Test**. It is the official placement assessment used by every institution in the Florida College System — the twenty-eight public colleges and universities that together serve more than seven hundred thousand students across the state. PERT was developed by McCann Associates and has been in use since 2010, when Florida law mandated a single statewide placement standard to ensure that incoming students would be placed consistently into the appropriate level of coursework regardless of which Florida college they attended.

The PERT has three sections: Reading, Writing, and Mathematics. This guide focuses exclusively on the **Math section**, which consists of **30 multiple-choice questions**. Five of those 30 questions are experimental and do not count toward your score — you will not know which five as you take the test — so 25 questions are actually scored. The exam is **computer-adaptive**, which means the difficulty of each question you see is calibrated to your performance on the previous questions. Unlike many other placement tests, the PERT is **untimed**, allowing you to work at your own pace without clock pressure.

PERT Math scores range from **50 to 150**. The cutoff scores that matter most are these: a score of **114** or higher places you into Intermediate Algebra, a score of **123** or higher places you into College Algebra, and a score of **150** indicates readiness for precalculus or higher. Scores below 114 place students into developmental (remedial) math courses, which cost tuition but do not earn college credit and extend the time required to complete a degree. The placement cutoffs are set by the Florida Department of Education and apply uniformly across the state college system.

The content tested on PERT Math is drawn primarily from **pre-algebra, elementary algebra, and basic geometry**. Specific topics include linear equations and inequalities, polynomials, factoring, quadratics, rational expressions, exponents and radicals, coordinate geometry, functions, and word problems that apply these concepts to real-world contexts. The PERT does not test trigonometry or precalculus topics, which is one of the key differences between it and the ACCUPLACER Advanced Algebra and Functions test or the upper tiers of ALEKS PPL. If you are preparing for PERT alone, you can focus your study on Chapters 1 through 9 of Part One and spend less time on the trigonometry and higher function material in Chapters 10 and beyond.

About the Simulations in This Section

Each of the four simulations that follow contains **30 questions**, matching the full length of the real PERT Math test exactly. The questions reflect the Florida placement blueprint proportionally, with the majority drawn from algebra topics (linear equations, inequalities, polynomials, factoring, and functions) and smaller portions drawn from number sense, basic geometry, and real-world applications. Taken together, the four simulations deliver **120 practice questions** that cover the full range of content tested on the real PERT Math exam.

Every simulation is followed by a complete answer key with detailed explanations for each question. The explanations identify the correct answer, walk through the reasoning behind it, and point you back to the specific chapter in Part One where the relevant concept was taught. When you miss a question, the explanation becomes a targeted review lesson — return to the chapter, rework the example problems, and move on to the next simulation with the weakness addressed.

Because these simulations are delivered on paper, they are not computer-adaptive in the way the real PERT is. Every test taker who uses this book sees the same questions in the same order, which is exactly what makes these simulations reliable measuring tools. A non-adaptive practice test provides a consistent baseline for tracking your progress from one simulation to the next, giving you clear evidence of improvement as you work through the section.

How to Take These Simulations

Treat every simulation like the real exam. Find a quiet space, set aside 60 to 90 minutes, and turn off your phone. Keep scratch paper and a pencil ready, and use only the on-screen calculator equivalent that the real PERT provides. Florida testing centers do not permit personal calculators or electronic devices, but the PERT system displays a basic calculator icon on certain questions where calculation is expected. For these practice simulations, limit yourself to a basic four-function calculator on the questions that genuinely require one, and work the rest of the exam with mental math, paper, and pencil.

Work each question carefully and honestly. Do not flip to the answer key until the full simulation is complete, even on the questions that feel hard or unfamiliar. The value of a simulation comes from committing to your own answer before verification, and the questions you find most difficult are exactly the ones from which you will learn the most when you review the explanation.

After finishing a simulation, review every question — the ones you got right as well as the ones you missed. For every wrong answer, return to the relevant chapter in Part One, reread the section, and rework the example problems before moving on. Between simulations, plan at least a few hours of targeted review so that the weaknesses revealed by one attempt are addressed before the next.

Scoring Yourself

Although the real PERT reports scores on the 50–150 scale, you can track your progress on these simulations using **percent correct**, which provides a more intuitive measure on a paper test. As a rough guide, a percent correct of **70% or higher** on a PERT simulation corresponds to a likely score at or above the 114 cutoff required to skip developmental math and enter Intermediate Algebra. A percent correct of **80% or higher** corresponds to likely placement into College Algebra (above the 123 cutoff). A percent correct of **90% or higher** puts you in strong contention for the highest placement tier.

Record your score on every simulation and compare it to the score on the previous one. Consistent upward movement across the four simulations is the clearest sign that your preparation is working and that you are ready for the real PERT.

A Final Word Before You Begin

Four full PERT simulations lie ahead — 120 questions drawn from the same topics, with the same structure, and at the same difficulty as the real exam. Every question is a rehearsal for a question you will answer on test day. Every wrong answer you catch now is one you will not make when your placement is on the line. Take these simulations seriously, work honestly, and let your rising percent-correct score guide you toward the test date.

Turn the page when you are ready. Practice Exam 8 begins with the first full PERT Math Simulation — 30 questions drawn from the complete range of topics tested by the Florida College System's official placement assessment.

PRACTICE EXAM 8: PERT MATH SIMULATION

---

1. A beach vendor sells 84 ice cream cones in 4 hours. At this rate, how many cones does he sell per hour?

A. 18 cones per hour

B. 20 cones per hour

C. 21 cones per hour

D. 24 cones per hour

2. Solve for x: $2x + 15 = 35$.

A. 10

B. 12

C. 15

D. 20

3. What is $\frac{2}{5}$ of 45?

A. 15

B. 18

C. 20

D. 25

4. A rectangle has a length of 18 feet and a width of 12 feet. What is its area?

A. 30 square feet

B. 60 square feet

C. 108 square feet

D. 216 square feet

5. Which fraction is equivalent to 0.75?

A. 3/4

B. 2/3

C. 7/10

D. 5/8

6. Factor: $x^2 - 36$.

A. $(x - 6)^2$

B. $(x - 36)(x + 1)$

C. $(x - 6)(x + 6)$

D. $(x + 6)^2$

7. A student scored 85, 92, 78, and 95 on four tests. What is the mean?

A. 85

B. 87

C. 88

D. 87.5

8. Solve the inequality: $x - 5 > 7$.

A. $x > 2$

B. $x > 12$

C. $x < 12$

D. $x < 2$

9. Simplify: $3(x + 4) - 2x$.

A. $x + 12$

B. $5x + 12$

C. $x + 4$

D. $x - 12$

10. The slope of the line through (0, 2) and (4, 10) is:

A. 4

B. 3

C. 1/2

D. 2

11. What is 30% of 80?

A. 24

B. 20

C. 25

D. 32

12. Simplify: $5x^2 - 3x^2 + x$.

A. $2x^2 + x^2 + x$

B. $8x^2 + x$

C. $2x^3 + x$

D. $2x^2 + x$

13. A pizza shop makes 150 pizzas in 6 hours. How many pizzas per hour?

A. 20 pizzas

B. 22 pizzas

C. 25 pizzas

D. 30 pizzas

14. Solve for y: $3y - 8 = 10$.

A. 5

B. 6

C. 7

D. 8

15. The perimeter of a square with side length 9 cm is:

A. 18 cm

B. 27 cm

C. 81 cm

D. 36 cm

16. Which of the following is a solution to $x^2 = 25$?

A. $x = 5$ or $x = -5$

B. $x = 5$ only

C. $x = 25$

D. $x = -5$ only

17. A bus travels 240 miles in 4 hours. Its speed is:

A. 50 mph

B. 55 mph

C. 60 mph

D. 65 mph

18. Simplify: $(x^3)(x^2)$.

A. x^6

B. x^5

C. $2x^5$

D. x^2

19. A triangle has angles of 50° and 60°. The third angle is:

A. 60°

B. 65°

C. 75°

D. 70°

20. Which expression represents "5 less than twice a number"?

A. $2x - 5$

B. $5 - 2x$

C. $2(x - 5)$

D. $5x - 2$

21. A backpack is on sale for 20% off. If the original price is $45, the sale price is:

A. $32

B. $36

C. $38

D. $40

22. Simplify: $(x + 2)(x + 5)$.

A. $x^2 + 10$

B. $x^2 + 7x + 7$

C. $x^2 - 7x - 10$

D. $x^2 + 7x + 10$

23. A rectangle's perimeter is 28 m and its length is 8 m. The width is:

A. 6 m

B. 8 m

C. 10 m

D. 14 m

24. Which point lies on the line $y = 2x - 1$?

A. (0, 2)

B. (1, 0)

C. (3, 5)

D. (2, 1)

25. Simplify: $(4x^2 - 8x)/4x$.

A. $x^2 - 2x$

B. $4x - 8$

C. $x - 8$

D. $x - 2$

26. The median of {6, 9, 12, 15, 18} is:

A. 9

B. 12

C. 15

D. 10.5

27. Solve: $x/3 = 9$.

A. 27

B. 3

C. 12

D. 6

28. A box contains 12 red and 8 blue balls. The probability of drawing red is:

A. 1/2

B. 2/5

C. 8/20

D. 3/5

29. The equation of a line with slope 4 and y-intercept −3 is:

A. $y = -3x + 4$

B. $y = 4x + 3$

C. $y = 4x - 3$

D. $y = -4x - 3$

30. A circle has a radius of 7 inches. Its circumference is:

A. 7π inches

B. 14π inches

C. 49π inches

D. 28π inches

PRACTICE EXAM 8: ANSWER KEY AND EXPLANATIONS

1. C — 21 cones per hour. Dividing total cones by total time gives $84 \div 4 = 21$ cones per hour. Unit rate problems always divide the total quantity by the number of units to find the rate per single unit.
2. A — 10. Subtracting 15 from both sides gives $2x = 20$, and dividing by 2 gives $x = 10$. Two-step linear equations are solved by reversing the operations in the opposite order they were applied.
3. B — 18. Calculating ⅖ of 45 means multiplying $(2/5) \times 45 = 90/5 = 18$. Fraction-of calculations always convert "of" into multiplication.
4. D — 216 square feet. The area of a rectangle is length × width, so $18 \times 12 = 216$ square feet. Area is always measured in squared units.
5. A — 3/4. Dividing 3 by 4 gives exactly 0.75, making 3/4 equivalent to the decimal. This is a common decimal-fraction equivalent worth memorizing for placement exams.
6. C — $(x - 6)(x + 6)$. The expression $x^2 - 36$ is a difference of squares, following the pattern $a^2 - b^2 = (a + b)(a - b)$. Since $36 = 6^2$, the factored form is $(x - 6)(x + 6)$.
7. D — 87.5. Adding the four test scores gives $85 + 92 + 78 + 95 = 350$, and dividing by 4 gives $350 \div 4 = 87.5$. The mean is always the sum divided by the count of values.
8. B — $x > 12$. Adding 5 to both sides gives $x > 12$ directly. The inequality sign does not flip because no multiplication or division by a negative number is involved in the solution.
9. A — $x + 12$. Distributing the 3 gives $3x + 12 - 2x$, and combining like terms produces $x + 12$. Simplification problems always complete the distribution step before combining like terms.
10. D — 2. Using the slope formula $(y_2 - y_1)/(x_2 - x_1)$, we get $(10 - 2)/(4 - 0) = 8/4 = 2$. The slope measures the rate of vertical change per unit of horizontal change between two points.
11. A — 24. Multiplying 0.30×80 gives 24, which is 30% of 80. Percent-of calculations convert the percent to a decimal and multiply by the whole.
12. D — $2x^2 + x$. Combining like terms, $5x^2 - 3x^2 = 2x^2$, and the x term stands alone. The simplified expression is $2x^2 + x$. Only terms with identical variable parts can be combined.
13. C — 25 pizzas. Dividing 150 pizzas by 6 hours gives 25 pizzas per hour. This is a unit rate calculation that converts total output into a per-hour rate.

14. B — 6. Adding 8 to both sides gives $3y = 18$, and dividing by 3 gives $y = 6$. Linear equations are solved by isolating the variable through inverse operations.

15. D — 36 cm. The perimeter of a square is 4 times the side length: $4 \times 9 = 36$ cm. All four sides of a square are equal in length, so perimeter is always the side length times four.

16. A — $x = 5$ or $x = -5$. Taking the square root of both sides of $x^2 = 25$ produces both positive and negative roots: $x = \pm 5$. Every positive square number has two square roots, one positive and one negative.

17. C — 60 mph. Dividing total distance by total time gives $240 \div 4 = 60$ miles per hour. Speed is always calculated as distance divided by time.

18. B — x^5. Multiplying like bases requires adding the exponents, so $x^3 \cdot x^2 = x^{(3+2)} = x^5$. The product rule for exponents is one of the most fundamental rules in algebra.

19. D — 70°. The three interior angles of a triangle always sum to 180°, so the third angle is $180 - 50 - 60 = 70°$. This follows directly from the Triangle Angle Sum Theorem.

20. A — $2x - 5$. The phrase "twice a number" translates to $2x$, and "5 less than" that quantity means subtracting 5, giving $2x - 5$. The phrase "less than" always reverses the expected order in translation.

21. B — \$36. A 20% discount means paying 80% of the original price. Calculating $0.80 \times 45 = \$36$ gives the sale price after the markdown is applied.

22. D — $x^2 + 7x + 10$. Using FOIL: $x \cdot x = x^2$, $x \cdot 5 = 5x$, $2 \cdot x = 2x$, $2 \cdot 5 = 10$. Combining gives $x^2 + 5x + 2x + 10 = x^2 + 7x + 10$. FOIL multiplies every term in the first binomial by every term in the second.

23. A — 6 m. The perimeter formula $P = 2l + 2w$ gives $28 = 16 + 2w$, so $2w = 12$ and $w = 6$ m. Perimeter problems substitute the known values and solve for the remaining dimension.

24. C — (3, 5). Substituting $x = 3$ into $y = 2x - 1$ gives $y = 6 - 1 = 5$, confirming that (3, 5) lies on the line. A point lies on a line only when its coordinates satisfy the line's equation.

25. D — $x - 2$. Factoring the numerator gives $4x(x - 2)$, and dividing by $4x$ leaves $(x - 2)$. This simplification is valid for all $x \neq 0$, where the expression is defined.

26. B — 12. For an odd number of values arranged in order, the median is the single middle value. With five values, the third value is in the middle, and 12 is the third entry in {6, 9, 12, 15, 18}.

27. A — 27. Multiplying both sides by 3 gives $x = 27$. Equations with fractions are solved most efficiently by eliminating the denominator through multiplication.

28. D — 3/5. The total number of balls is $12 + 8 = 20$, and 12 are red. The probability is $12/20 = 3/5$ when reduced to simplest form.

29. C — $y = 4x - 3$. The slope-intercept form $y = mx + b$ requires the slope m and the y-intercept b. Substituting $m = 4$ and $b = -3$ gives $y = 4x - 3$ directly.

30. B — 14π inches. The circumference formula $C = 2\pi r$ gives $C = 2\pi(7) = 14\pi$ inches. Circumference is always twice the radius times π.