

ACT Math Practice Test 9

50 Minutes — 45 Questions

Choose the best answer for each question. A permitted calculator may be used. Figures are not necessarily drawn to scale.

- 1) A sensor reports a value that is 0.8 times the actual measurement. If the actual measurement is 25, what value does the sensor report?
☐ A. 20
☐ B. 16
☐ C. 18
☐ D. 31.25
- 2) Solve $4(2x - 3) = 5x + 9$.
☐ F. 7
☐ G. 5
☐ H. 6
☐ J. 8
- 3) Each exterior angle of a regular polygon measures 24° . How many sides does the polygon have?
☐ A. 12
☐ B. 15
☐ C. 18
☐ D. 24
- 4) A bag contains 5 red, 3 blue, and 2 green counters. If one counter is selected at random, what is the probability that it is not blue?
☐ F. $\frac{7}{10}$
☐ G. $\frac{3}{10}$
☐ H. $\frac{1}{2}$
☐ J. $\frac{9}{10}$
- 5) The mass of a hydrogen atom is approximately 0.000000000000000000000000167 grams. Which expression gives this mass in scientific notation?
☐ A. 1.67×10^{-24} g
☐ B. 1.67×10^{24} g
☐ C. 1.67×10^{-23} g
☐ D. 1.67×10^{-25} g
- 6) A cyclist rides 42 miles in 1.5 hours at a constant speed. At that speed, how far will the cyclist ride in 2.25 hours?
☐ F. 56 miles
☐ G. 63 miles
☐ H. 60 miles
☐ J. 67.5 miles
- 7) Solve $3(2x - 1) + 4 = 5x + 10$.
☐ A. 9
☐ B. 6
☐ C. 7
☐ D. 8
- 8) Which pair of figures must be congruent?
☐ F. Two rectangles with the same perimeter
☐ G. Two rectangles that each measure 6 cm by 4 cm
☐ H. Two triangles with the same three angle measures
☐ J. Two circles with radii 3 cm and 5 cm

- 9) Find the mean absolute deviation of the data set: 4, 8, 10, 12, 16.

☐ A. 2.4

☐ C. 3.2

☐ B. 3.0

☐ D. 4.0

- 10) A lamp marked \$80 is discounted by 15%. A fixed \$6 delivery charge is then added. What is the total cost before tax?

☐ F. \$62

☐ H. \$74

☐ G. \$68

☐ J. \$86

- 11) A line passes through the origin and has a slope of $-\frac{3}{4}$. Which equation represents this line?

☐ A. $y = -\frac{3}{4}x$

☐ C. $y = \frac{4}{3}x$

☐ B. $y = -\frac{3}{4}x + 1$

☐ D. $y = -\frac{4}{3}x$

- 12) Which expression is equivalent to $(\frac{2}{3})^{-2}$?

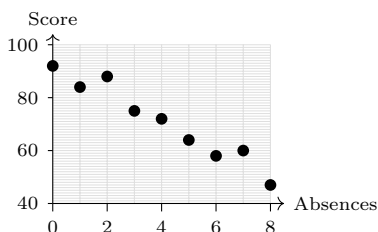
☐ F. $\frac{4}{9}$

☐ H. $\frac{9}{4}$

☐ G. $-\frac{4}{9}$

☐ J. $-\frac{9}{4}$

- 13) The scatterplot compares the number of absences a student has per semester with the student's final exam score. What type of association does it show?



☐ A. Strong negative association

☐ C. Strong positive association

☐ B. Weak positive association

☐ D. No association

- 14) An exponential graph crosses the y -axis at 4 and each output is multiplied by 3 when x increases by 1. Which equation matches the graph?

☐ F. $y = 3 \cdot 4^x$

☐ H. $y = 4 \cdot 3^x$

☐ G. $y = 4x + 3$

☐ J. $y = 3 \cdot x^4$

- 15) Let $f(x) = 4x - 7$ and $g(x) = x^2 + 1$. What is the value of $f(g(2))$?

☐ A. 5

☐ C. 13

☐ B. 9

☐ D. 17

- 16) What is the equation of the line passing through points (2, 7) and (5, 16)?

☐ F. $y = 3x + 1$

☐ H. $y = 2x + 3$

☐ G. $y = 3x - 1$

☐ J. $y = 4x - 1$

- 17) Triangle ABC has vertices at $A(2, 3)$, $B(5, 1)$, and $C(4, 6)$. The triangle is reflected over the x -axis and then translated 3 units left. What are the coordinates of the image of point B?

☐ A. (2, -1)

☐ C. (8, -1)

☐ B. (2, 1)

☐ D. (5, -4)

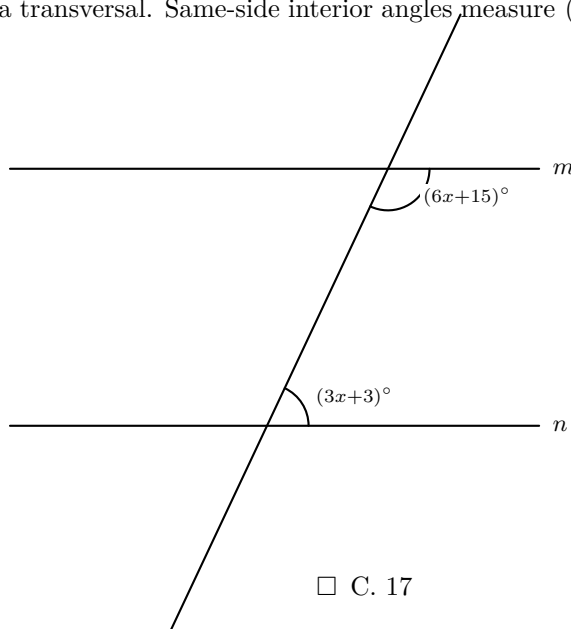
- 18) The table shows the total money a worker earns at a part-time job over time at a constant rate.

Time (hours)	2	4	6	8
Earnings (dollars)	37.50	75.00	112.50	150.00

What is the unit rate of change?

- ☐ F. \$16.25 per hour
 ☐ H. \$18.75 per hour
☐ G. \$18.25 per hour
 ☐ J. \$19.25 per hour
- 19) A student needs at least 80 points to earn a B on an exam. The student currently has 53 points. Which inequality represents how many more points p the student needs?
- ☐ A. $p + 53 \leq 80$
☐ C. $53 - p \geq 80$
☐ B. $p + 53 \geq 80$
☐ D. $p - 53 \geq 80$
- 20) What is the domain of $f(x) = \frac{\sqrt{2x-6}}{x-5}$?
- ☐ F. $[3, \infty)$
☐ H. $(3, 5) \cup (5, \infty)$
☐ G. $[3, 5) \cup (5, \infty)$
☐ J. $(-\infty, 3] \cup (5, \infty)$
- 21) A regular octagon has how many degrees in each interior angle?
- ☐ A. 120°
☐ C. 135°
☐ B. 128°
☐ D. 140°
- 22) A school fundraiser receives \$50 before selling any tickets, then receives \$8 for each ticket sold. The total amount collected after n tickets is $R(n) = 50 + 8n$. What does the 50 represent?
- ☐ F. 50 collected for each ticket
 ☐ H. 50 tickets sold
☐ G. 50 collected before any tickets are sold
 ☐ J. 50 as a rate of 50 dollars per ticket
- 23) A square has side length $x + 3$ and area 144 square units. What positive value of x makes this true?
- ☐ A. 12
 ☐ C. -15
☐ B. 9
 ☐ D. 3
- 24) Find the intersection point of the graphs $y = 3x - 1$ and $y = x + 7$.
- ☐ F. (3, 8)
 ☐ H. (5, 11)
☐ G. (4, 7)
 ☐ J. (4, 11)

- 25) Two parallel lines are cut by a transversal. Same-side interior angles measure $(6x + 15)^\circ$ and $(3x + 3)^\circ$. What is the value of x ?



- ☐ A. 15
 ☐ C. 17
☐ B. 18
 ☐ D. 16

26) For $f(x) = \frac{x+3}{x^2-9}$, which values must be excluded from the domain?

☐ F. $x = -3$ only
 ☐ H. $x = 3$ only
☐ G. $x = -3$ and $x = 3$
☐ J. No real values

27) What is the value of $\frac{(2^3)^4}{2^5}$?

☐ A. 64
 ☐ C. 128
☐ B. 256
 ☐ D. 512

28) A batch contains 50 defective items, and the defective fraction is 0.0025. If x is the total number of items, then $\frac{50}{x} = 0.0025$. What is x ?

☐ F. 2,000
 ☐ H. 12,500
☐ G. 20,000
 ☐ J. 25,000

29) A quiz score of 70 was earned by 4 students, a score of 80 by 10 students, and a score of 90 by 4 students. What was the mean score for all 18 students?

☐ A. 78
 ☐ C. 80
☐ B. 79
 ☐ D. 81

30) A student is solving the system below.

$$\begin{cases} y = x + 5 \\ 2x + y = 14 \end{cases}$$

Which equation should result from substituting correctly?

- ☐ F. $2x + x = 14$
☐ H. $2x + 5 = 14$
☐ G. $2x + (x + 5) = 14$
☐ J. $x + 5 = 14$
 31) The table shows values of a function f . Which rule matches the table?

x	0	1	2	3
$f(x)$	-2	-1	2	7

- ☐ A. $f(x) = x + 2$
- ☐ B. $f(x) = x^2 - 2$
- ☐ C. $f(x) = 2x - 2$
- ☐ D. $f(x) = x^2 + 2$

- 37) A school counselor records whether students in two grades used tutoring during the term.

	Used tutoring	Did not use tutoring	Total
Grade 11	18	22	40
Grade 12	36	24	60

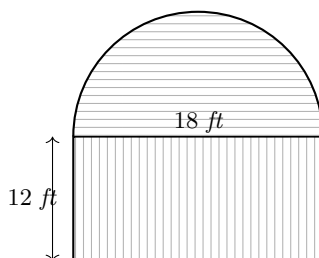
By how many percentage points was tutoring use higher among Grade 12 students than among Grade 11 students?

- ☐ A. 10 ☐ C. 18
- ☐ B. 15 ☐ D. 30

- 38) A circle has radius 13 units. A chord is 10 units long. What is the perpendicular distance from the center of the circle to the chord?

- ☐ F. 5 units ☐ H. 12 units
- ☐ G. 10 units ☐ J. 13 units

- 39) A figure is composed of a rectangle and a semicircle as shown.



What is the total area of the figure? Use $\pi = 3.14$.

- ☐ A. 216 ft^2
☐ C. 315.8 ft^2
- ☐ B. 272.5 ft^2
☐ D. 343.2 ft^2

- 40) What is the value of $\frac{16^{3/4} 81^{-1/2}}{2^{-1}}$?

- ☐ F. $\frac{8}{9}$ ☐ H. $\frac{16}{9}$
- ☐ G. $\frac{4}{9}$ ☐ J. $\frac{16}{27}$

- 41) The equation $x^2 - 9x + k = 0$ has two positive roots, and one root is twice the other. What is the value of k ?

- ☐ A. 12 ☐ C. 27
- ☐ B. 24 ☐ D. 18

- 42) A quadratic function has zeros at $x = -2$ and $x = 6$, and $f(0) = -24$. What is the minimum value of the function?

- F. -36
 - G. -24
 - H. -16
 - J. -32

- 43) A circle has center $(-2, 1)$, and the point $P(4, 9)$ lies on the circle. Which equation represents the line tangent to the circle at P ?

- ☐ A. $y - 9 = \frac{4}{3}(x - 4)$
☐ C. $y - 9 = -\frac{3}{4}(x - 4)$
- ☐ B. $y - 1 = -\frac{3}{4}(x + 2)$
☐ D. $y + 2 = \frac{3}{4}(x - 1)$

- 44) A fair six-sided number cube is rolled, and then one card is selected at random from cards numbered 1 through 4. What is the probability that the cube shows a number greater than 4 and the card shows an even number?
- ☐ F. $\frac{1}{12}$ ☐ H. $\frac{1}{4}$
- ☐ G. $\frac{1}{6}$ ☐ J. $\frac{1}{3}$
- 45) A regional train leaves a station at 7:05 a.m. and every 24 minutes afterward. A passenger arrives at 9:18 a.m. and takes the first train that leaves after that time. The ride to a transfer station takes 37 minutes. After a 16-minute transfer, the passenger boards the next train; trains at the transfer station leave at 10:00 a.m. and every 30 minutes afterward. The second ride takes 42 minutes. At what time does the passenger arrive?
- ☐ A. 10:42 a.m. ☐ C. 11:12 a.m.
- ☐ B. 11:04 a.m. ☐ D. 11:30 a.m.

Scratch work

Answer Key and Explanations

1. A Standard: ACT Math: Integrating Essential Skills

The sensor reading is the actual measurement multiplied by 0.8. So its reading is $0.8(25) = 20$. A quick check is that 80% of 25 is 20, which is less than the actual value, as the calibration rule predicts.

2. F Standard: ACT Math: Algebra

Distribute the 4 first: $8x - 12 = 5x + 9$. Subtract $5x$ from both sides and add 12 to both sides, giving $3x = 21$, so $x = 7$. Substitution checks the result: both sides equal 44.

3. B Standard: ACT Math: Geometry

The exterior angles of any convex polygon add to 360° . Since this polygon is regular, each exterior angle has the same measure, so the number of sides is $360/24 = 15$.

4. F Standard: ACT Math: Statistics & Probability

There are $5 + 3 + 2 = 10$ counters altogether. Seven of them are not blue: the 5 red counters and the 2 green counters. Therefore, the probability is $\frac{7}{10}$. This is also the complement of drawing blue, whose probability is $\frac{3}{10}$.

5. A Standard: ACT Math: Number & Quantity

To write the coefficient as 1.67, move the decimal point 24 places to the right. Because the original number is less than 1, the power of 10 must be negative: 1.67×10^{-24} . The other choices either make the quantity enormous or shift the decimal one place too far.

6. G Standard: ACT Math: Integrating Essential Skills

First find the constant speed: $42 \div 1.5 = 28$ miles per hour. In 2.25 hours, the cyclist covers $28(2.25) = 63$ miles. The units work as a check: miles per hour multiplied by hours gives miles.

7. A Standard: ACT Math: Algebra

After distributing, the left side is $6x - 3 + 4$, or $6x + 1$. Thus $6x + 1 = 5x + 10$. Subtracting $5x$ leaves $x + 1 = 10$, so $x = 9$. Putting 9 into the original equation gives 31 on each side.

8. G Standard: ACT Math: Geometry

Congruent figures match in both shape and size. The two 6-by-4 rectangles have the same side lengths, so one fits exactly over the other. A matching perimeter can come from rectangles with different dimensions, and triangles with the same angles can have different sizes. The circles in the remaining pair have different radii, so they are not congruent.

9. C Standard: ACT Math: Statistics & Probability

Mean: $(4 + 8 + 10 + 12 + 16)/5 = 50/5 = 10$. Absolute deviations from the mean: $|4 - 10| = 6$, $|8 - 10| = 2$, $|10 - 10| = 0$, $|12 - 10| = 2$, $|16 - 10| = 6$. MAD: $(6 + 2 + 0 + 2 + 6)/5 = 16/5 = 3.2$.

10. H Standard: ACT Math: Integrating Essential Skills

A 15% discount leaves 85% of the marked price. The discounted lamp costs $0.85(80) = \$68$. Add the \$6 delivery charge to get a total of \$74.

11. A Standard: ACT Math: Algebra

Slope-intercept form: $y = mx + b$. Given slope $m = -\frac{3}{4}$ and line passes through the origin $(0, 0)$, so $b = 0$. Equation: $y = -\frac{3}{4}x$. The equation is $y = -\frac{3}{4}x$.

12. H Standard: ACT Math: Number & Quantity

Apply the negative exponent rule: $\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$. Step 1: $\left(\frac{2}{3}\right)^{-2} = \left(\frac{3}{2}\right)^2$. Step 2: $\left(\frac{3}{2}\right)^2 = \frac{9}{4}$. Alternative method: $\left(\frac{2}{3}\right)^{-2} = \frac{1}{(2/3)^2} = \frac{1}{4/9} = 9/4$. Negative exponents do not make the result negative. $\left(\frac{2}{3}\right)^{-2} = \frac{9}{4}$.

13. A Standard: ACT Math: Statistics & Probability

When one variable increases while the other decreases, the association is negative. Since the data points cluster closely around the trend line, the association is strong. The scatterplot shows a strong negative association.

14. H Standard: ACT Math: Functions

The y -intercept gives the initial value, so $a = 4$. The phrase each output is multiplied by 3 gives the base, so $b = 3$. In the form $y = a \cdot b^x$, the equation is $y = 4 \cdot 3^x$.

15. C Standard: ACT Math: Functions

Start with the inside function. Since $g(2) = 2^2 + 1 = 5$, the expression becomes $f(5)$. Then $f(5) = 4(5) - 7 = 13$.

16. F Standard: ACT Math: Functions

Find the slope: $m = \frac{16-7}{5-2} = \frac{9}{3} = 3$. Use point-slope form with $(2, 7)$: $y - 7 = 3(x - 2)$, so $y = 3x + 1$. The equation is $y = 3x + 1$.

17. A Standard: ACT Math: Geometry

Step 1: Reflect $B(5, 1)$ over the x -axis using the rule $(x, y) \rightarrow (x, -y)$: $B'(5, -1)$. Step 2: Translate 3 units left using the rule $(x, y) \rightarrow (x - 3, y)$: $B''(5 - 3, -1) = B''(2, -1)$. The coordinates of the image of point B are $(2, -1)$.

18. H Standard: ACT Math: Integrating Essential Skills

The unit rate of change is slope (earnings $\div$ time). Using the table: $\frac{75.00 - 37.50}{4 - 2} = \frac{37.50}{2} = 18.75$. Other intervals confirm the rate is constant. The worker earns \$18.75 per hour.

19. B Standard: ACT Math: Algebra

The student has 53 points and needs at least 80 total, so the total after earning p more points must satisfy $53 + p \geq 80$. Subtract 53 to get $p \geq 27$. Check: 27 more points gives exactly 80, and any larger number also earns at least a B, so choice B is correct.

20. G Standard: ACT Math: Functions

The radicand must be nonnegative, so $2x - 6 \geq 0$ and $x \geq 3$. The denominator also cannot be zero, which excludes $x = 5$. Starting with $[3, \infty)$ and removing 5 gives $[3, 5) \cup (5, \infty)$.

21. C Standard: ACT Math: Geometry

Sum of interior angles of n -sided polygon: $(n - 2) \times 180^\circ$. For octagon ($n = 8$): $(8 - 2) \times 180 = 6 \times 180 = 1080^\circ$. Each interior angle of regular octagon: $\frac{1080}{8} = 135^\circ$. Each angle is 135° .

22. G Standard: ACT Math: Functions

The number of tickets is n , so setting $n = 0$ represents the moment before any tickets have been sold. The model then gives $R(0) = 50$. That is the initial donation. The $8n$ term accounts for the money added by ticket sales.

23. B Standard: ACT Math: Algebra

The side length must be the positive square root of the area, so $x + 3 = \sqrt{144} = 12$. Subtracting 3 gives $x = 9$. The equation $(x + 3)^2 = 144$ also has the algebraic solution $x = -15$, but that would make the side length negative, so it cannot describe the square.

24. J Standard: ACT Math: Algebra

At an intersection, both equations give the same y -value. Set their right sides equal: $3x - 1 = x + 7$, so $2x = 8$ and $x = 4$. Substituting into either equation gives $y = 11$. The point is $(4, 11)$, and it satisfies both equations.

25. B Standard: ACT Math: Geometry

Same-side interior angles are supplementary: $(6x + 15) + (3x + 3) = 180 \Rightarrow 9x + 18 = 180 \Rightarrow 9x = 162 \Rightarrow x = 18$. $x = 18$.

26. G Standard: ACT Math: Functions

A rational function is undefined when its denominator is zero. Factor the denominator: $x^2 - 9 = (x - 3)(x + 3)$. It vanishes at $x = 3$ and $x = -3$, so both values are excluded. Even though the numerator shares a factor with the denominator, the original expression is still undefined at those inputs.

27. C Standard: ACT Math: Number & Quantity

When a power is raised to a power, multiply the exponents: $(2^3)^4 = 2^{12}$. Dividing powers with the same base means subtracting exponents, so $2^{12}/2^5 = 2^7 = 128$. The expression stays positive, and the result 2^7 agrees with the calculation.

28. G Standard: ACT Math: Integrating Essential Skills

Multiply both sides of $50/x = 0.0025$ by x , giving $50 = 0.0025x$. Now divide by 0.0025: $x = 50/0.0025 = 20,000$. A quick check is that 0.25% of 20,000 is 50, as required.

29. C Standard: ACT Math: Statistics & Probability

Multiply each score by the number of students who earned it, then divide by the total number of students. The total points are $4(70) + 10(80) + 4(90) = 280 + 800 + 360 = 1,440$. Dividing by 18 gives a mean of 80 points.

30. G Standard: ACT Math: Algebra

The equation $y = x + 5$ tells us exactly what to substitute for y . In $2x + y = 14$, replace y with the full expression $x + 5$, including parentheses. The correct substituted equation is $2x + (x + 5) = 14$.

31. B Standard: ACT Math: Functions

Test the rule $f(x) = x^2 - 2$ at the four listed inputs. It gives -2 , -1 , 2 , and 7 for $x = 0, 1, 2, 3$, respectively, matching every table entry. The linear choices cannot match the changing differences in the table.

32. F Standard: ACT Math: Statistics & Probability

There are 12 times, so the median is the average of the 6th and 7th values after the times are ordered. The first two values are 6; the next three, positions 3 through 5, are 10. That means positions 6 through 9 are all 14, so both middle values are 14. Their average is 14 minutes.

33. D Standard: ACT Math: Number & Quantity

Both quantities have the same power of 10. Add the decimal parts: $8.2 + 6.9 = 15.1$. So $8.2 \times 10^4 + 6.9 \times 10^4 = 15.1 \times 10^4$. In scientific notation, $15.1 \times 10^4 = 1.51 \times 10^5$. The approximate total area is 1.51×10^5 square kilometers.

34. H Standard: ACT Math: Integrating Essential Skills

The graph represents $C = 3.50 + 0.80d$, where d is distance in miles. Set the cost equal to 19.50: $19.50 = 3.50 + 0.80d$. After paying the 3.50 starting fee, 16.00 remains for mileage. At 0.80 per mile, that covers $16.00/0.80 = 20$ miles. Substituting 20 back into the model gives $3.50 + 0.80(20) = 19.50$, matching the fare.

35. D Standard: ACT Math: Integrating Essential Skills

The expression $4(t + 6)$ means 4 groups of a ticket and a \$6 audio guide. Distributing gives $4t + 24$, which is equivalent and shows $4t$ dollars for tickets and \$24 for all audio guides. A useful way to read the rewritten form is that it separates the variable ticket cost from the fixed audio-guide cost.

36. J Standard: ACT Math: Integrating Essential Skills

Undo the tax first: $41.58/1.05 = 39.60$ dollars before tax. Undo the 10% discount by dividing by 0.90, which gives a pre-discount subtotal of 44. Of that, 12 is the setup fee, leaving 32 for pages. At 0.08 per page, $32/0.08 = 400$ pages. Reapplying the discount and tax returns the 41.58 bill.

37. B Standard: ACT Math: Statistics & Probability

Compare the percentages within each grade, so use each row's total as the denominator. In Grade 11, 18 of 40 students used tutoring, or 45%. In Grade 12, 36 of 60 used tutoring, or 60%. The difference is $60 - 45 = 15$ percentage points.

38. H Standard: ACT Math: Geometry

The perpendicular from a circle's center to a chord bisects the chord, so half the chord is 5 units. The radius to an endpoint, that half-chord, and the perpendicular distance form a right triangle. If the distance is d , then $d^2 + 5^2 = 13^2$, so $d^2 = 144$ and $d = 12$ units.

39. D Standard: ACT Math: Geometry

Rectangle area: $18 \times 12 = 216 \text{ ft}^2$. Semicircle has diameter 18 *ft*, so radius: $r = \frac{18}{2} = 9 \text{ ft}$. Semicircle area: $\frac{1}{2}\pi r^2 = \frac{1}{2}(3.14)(9^2) = \frac{1}{2}(3.14)(81) = 127.17 \text{ ft}^2$. Total area: $216 + 127.17 = 343.17 \approx 343.2 \text{ ft}^2$.

40. H Standard: ACT Math: Number & Quantity

The fourth root of 16 is 2, so $16^{3/4} = 2^3 = 8$. Also, $81^{-1/2} = 1/\sqrt{81} = 1/9$. The numerator is therefore $8/9$. Dividing by $2^{-1} = 1/2$ doubles that value: $(8/9)/(1/2) = 16/9$.

41. D Standard: ACT Math: Algebra

Let the smaller root be r . Then the roots are r and $2r$. Their sum is 9, from the coefficient of x , so $3r = 9$ and $r = 3$. The roots are 3 and 6, whose product is 18. By Vieta's formulas, that product equals k .

42. J Standard: ACT Math: Functions

Write the function as $f(x) = a(x + 2)(x - 6)$. Since $f(0) = -24$, we get $-12a = -24$, so $a = 2$. The axis of symmetry lies halfway between the zeros, at $x = 2$. Evaluating there gives $f(2) = 2(4)(-4) = -32$. Because a is positive, the parabola opens upward, so this vertex value is the minimum.

43. C Standard: ACT Math: Geometry

The radius from $(-2, 1)$ to $P(4, 9)$ rises 8 units and runs 6, so its slope is $8/6 = 4/3$. A tangent is perpendicular to the radius at the point of contact, so its slope is the negative reciprocal, $-3/4$. Using point-slope form through $P(4, 9)$ gives $y - 9 = -\frac{3}{4}(x - 4)$.

44. G Standard: ACT Math: Statistics & Probability

The cube shows a number greater than 4 on 2 of its 6 faces, so that probability is $2/6 = 1/3$. The card is even on 2 of its 4 possible values, so that probability is $1/2$. The outcomes are independent, so multiply: $(1/3)(1/2) = 1/6$.

45. C Standard: ACT Math: Integrating Essential Skills

The first train after 9:18 leaves at 9:29, since the departures include 9:05 and 9:29. The 37-minute ride ends at 10:06, and the 16-minute transfer ends at 10:22. The second service leaves at 10:00 and every 30 minutes, so the next train is at 10:30. Adding its 42-minute ride gives an arrival time of 11:12 a.m.