

ACT Questions

Pre-Algebra (21.6%-23% or approx. 8 points)

13-14 Questions involving things like

- Factors
- Square roots and approximations
- Absolute value and ordering numbers by value
- Exponents
- Scientific notation

Elementary Algebra (16.6%-18.3% or approx.. 6 to 7 points)

10-11 Questions involving things like

- Exponents and square roots
- Evaluation of algebraic expressions through substitution
- Using variables to express functional relationships
- Algebraic operations
- Factoring and quadratic equations

Intermediate Algebra (15% or approx.. 5.4 points)

9 Questions involving things like

- Quadratic formula
- Rational and radical expressions
- Absolute value equations and inequalities
- Sequences and patterns
- Polynomials
- Complex numbers

Coordinate Geometry: (15% or approx. 5.4 points)

9 Questions involving things like

- Graphing and the relations between equations and graphs, including points, lines, polynomials, circles, and other curves
- Graphing inequalities
- Slope
- Parallel and perpendicular lines
- Distance; midpoints; and conics

Plane Geometry: (21.6%-23% or approx. 8 points)

13-14 Questions involving things like

- Angles and relations among perpendicular and parallel lines
- Properties of circles, triangles, rectangles, parallelograms, and trapezoids
- Transformations
- Proof and proof techniques
- Volume
- Three-dimensional Geometry

Trigonometry: (6.6%-8.3% or approx. 2.3 to 3 points)

4-5 Questions involving things like

- Trigonometric relations in right triangles
- Values and properties of trigonometric functions
- Graphing trigonometric functions
- Modeling using trigonometric functions
- Solving trigonometric equations

ACT Formula Sheet

Distance

1 foot = 12 inches

1 yard = 3 feet

1 mile = 5,280 feet

1 mile \approx 1.61 kilometers

1 inch = 2.54 centimeters

1 foot = 0.3048 meters

1 meter = 1,000 millimeters

1 meter = 100 centimeters

1 kilometer = 1,000 meters

1 kilometer \approx 0.62 miles

Area

1 square foot = 144 square inches

1 square yard = 9 square feet

1 acre = 43,560 square feet

Volume

1 cup = 8 fluid ounces

1 quart = 4 cups

1 gallon = 4 quarts

1 gallon = 231 cubic inches

1 liter \approx 0.264 gallons

1 cubic foot = 1,728 cubic inches

1 cubic yard = 27 cubic feet

1 board foot = 1 inch by 12 inches by 12 inches

Weight

1 ounce \approx 28.350 grams

1 pound = 16 ounces

1 pound \approx 453.592 grams

1 milligram = 0.001 grams

1 kilogram = 1,000 grams

1 kilogram \approx 2.2 pounds

1 ton = 2,000 pounds

Rectangle

perimeter = $2(\text{length} + \text{width})$

area = $\text{length} \times \text{width}$

Rectangular Solid (Box)

volume = $\text{length} \times \text{width} \times \text{height}$

Cube

volume = $(\text{length of side})^3$

Triangle

sum of angles = 180°

area = $\frac{1}{2}(\text{base} \times \text{height})$

Circle

number of degrees in a circle = 360°

circumference $\approx 3.14 \times \text{diameter}$

area $\approx 3.14 \times (\text{radius})^2$

Cylinder

volume $\approx 3.14 \times (\text{radius})^2 \times \text{height}$

Cone

volume $\approx \frac{3.14 \times (\text{radius})^2 \times \text{height}}{3}$

Sphere (Ball)

volume $\approx \frac{4}{3} \times 3.14 \times (\text{radius})^3$

Electricity

1 kilowatt-hour = 1,000 watt-hours

amps = watts \div volts

Temperature

$^\circ\text{C} = 0.56(^\circ\text{F} - 32)$ or $\frac{5}{9}(^\circ\text{F} - 32)$

$^\circ\text{F} = 1.8(^\circ\text{C}) + 32$ or $(\frac{9}{5} \times ^\circ\text{C}) + 32$