Algebra 1 & Geometry

Practice Worksheet · 20 Questions · Algebra / Geometry

PART 1 — ALGEBRA 1

Memory Points: slope = (y2-y1)/(x2-x1) | y = mx + b | flip inequality sign when dividing by negative | x-intercept: set y=0

Q01 [Easy]

A line passes through (2, 5) and (4, 11). What is the slope?

Hint: slope = (y2-y1)/(x2-x1)

A. m = 2

B. m = 3

C. m = 1/3

D. m = 6

Q02 [Easy]

Which equation has slope -2 and y-intercept 7?

Hint: slope-intercept form y = mx + b

A. y = 7x - 2

B. y = 2x + 7

C. y = -2x + 7

D. y = -7x + 2

Q03 [Tricky]

Solve for x: 3(x - 4) = 2x + 1

Hint: distribute first, then collect like terms

A. x = 13

B. x = -11

C. x = 7

D. x = 5

Q04 [Tricky]

Which best describes the graph of y = -(1/2)x + 3?

Hint: negative slope = line falls left to right; b = y-intercept

A. Rising line through (0, -3)

B. Falling line through (0, -3)

C. Rising line through (0, 3)

D. Falling line through (0, 3)

Q05 [■ Flip!]

Solve the inequality: -4x + 2 >= 14

FLIP the inequality sign when dividing by a NEGATIVE number!

A. x >= -3

B. x <= -3

C. x >= 3

D. x <= 3

Q06 [Tricky]

What is the x-intercept of 2x - 3y = 12?

Hint: x-intercept -> set y = 0

A. x = 4

B. x = -4

C. x = 6

D. x = -6

Q07 [Easy]

Which line is parallel to y = 3x - 5?

PARALLEL = same slope, different y-intercept

A. y = 3x + 7

B. y = -(1/3)x + 2

C. y = 5x - 3

D. y = 3x - 5

Q08 [■ Flip!]

Which inequality has the solution set x > -2?

Hint: test each option by solving — watch for sign flips

A. -3x + 1 < -5

B. 2x + 4 <= 0

C. x + 2 > 0

D. -2x < 4

Q09 [Tricky]

f(x) = -x + 4. Find f(-3).

Hint: substitute x = -3, be careful with double negatives

A. 1

B. 7

C. -7

D. -1

Q10 [■ Compound]

Solve the compound inequality: -1 < 2x + 3 <= 9

Do the SAME operation to ALL THREE parts simultaneously

A. -2 < x <= 6

B. 1 < x <= 3

C. -2 < x <= 3

D. 2 < x <= 6

PART 2 — GEOMETRY

*Memory Points: Triangle angles = 180 | Pythagorean: a^2+b^2=c^2 | Polygon sum = (n-2)x180 | C = 2pi*r | A = pi*r^2*

Q11 [Easy]

A triangle has angles 48 degrees and 67 degrees. Find the third angle.

Triangle Angle Sum = 180 degrees

A. 55 degrees

B. 65 degrees

C. 75 degrees

D. 115 degrees

Q12 [Easy]

A right triangle has legs 6 and 8. Find the hypotenuse.

Pythagorean Theorem: a^2 + b^2 = c^2

A. 7

B. 14

C. 10

D. sqrt(28)

Q13 [Tricky]

What is the sum of interior angles of a hexagon?

Formula: (n - 2) x 180 degrees, where n = number of sides

A. 720 degrees

B. 540 degrees

C. 1080 degrees

D. 900 degrees

Q14 [Tricky]

A circle has radius 5 cm. Find its area. (use pi = 3.14)

Area = pi x r^2 (NOT 2 x pi x r — that is circumference!)

A. 31.4 cm^2

B. 15.7 cm^2

C. 25pi cm

D. 78.5 cm^2

Q15 [■ Tricky]

An exterior angle of a triangle is 110 degrees. Two equal non-adjacent interior angles — find each.

Exterior Angle Theorem: exterior angle = sum of 2 non-adjacent interior angles

A. 55 degrees each

B. 55 degrees each

C. 70 degrees each

D. 35 degrees each

Q16 [Tricky]

A regular pentagon: find each interior angle. (Perimeter = 35 cm, a distractor!)

Each interior angle = (n-2) x 180 / n

A. 120 degrees

B. 100 degrees

C. 108 degrees

D. 72 degrees

Q17 [■ Tricky]

A chord is NOT a diameter. Which is ALWAYS true?

Diameter = LONGEST chord; any other chord is shorter

A. Shorter than diameter

B. Passes through center

C. Equal to radius

D. Bisects the circle

Q18 [Tricky]

Arc length: radius = 9, central angle = 80 degrees. (Answer in terms of pi)

Arc length = (theta / 360) x 2 x pi x r

A. 4pi

B. 4pi

C. 2pi

D. 9pi

Q19 [■ Isosceles]

Isosceles triangle: vertex angle = 40 degrees. Find each base angle.

Isosceles: TWO equal base angles. Remaining = 180 - vertex, divide by 2

A. 40 degrees

B. 70 degrees

C. 140 degrees

D. 70 degrees

Q20 [■ Hard]

A circle is inscribed in a square (side = 10). Find the area OUTSIDE circle but INSIDE square. (pi = 3.14)

Inscribed: diameter = side, so radius = 5. Shaded = Square area - Circle area

A. 100 units^2

B. 78.5 units^2

C. 21.5 units^2

D. 25pi units^2

ANSWER KEY

Q01: **B**	Q02: **C**	Q03: **A**	Q04: **D**	Q05: **B**
Q06: **C**	Q07: **A**	Q08: **D**	Q09: **B**	Q10: **C**
Q11: **B**	Q12: **C**	Q13: **A**	Q14: **D**	Q15: **B**
Q16: **C**	Q17: **A**	Q18: **B**	Q19: **D**	Q20: **C**