

2026 UIL INTERMEDIATE CALCULATOR CHAMPIONSHIP – GRADE 6 DIVISION

GRADE 6 INTERMEDIATE DIVISION • 50 PROBLEMS • 30-MINUTE SPEED SPRINT • SC-6 ELEMENTARY

// OFFICIAL CONTESTANT IDENTIFICATION

CONTESTANT NAME: _____

SCHOOL / CAMPUS: _____

GRADE LEVEL: [] 3 [] 4 [] 5 [] 6

CONTESTANT ID #: _____

OFFICIAL SCORING GRID (GRADER VERIFIED)						
PAGE	P1	P2	P3	P4	P5	TOTAL
Correct (+5):						
Errors (-4):						
Subtotal:						

CONTEST RULES: 30 MINUTES • ALL ANSWERS TO 3 SIGNIFICANT DIGITS UNLESS INTEGER [INT] OR DOLLARS [\$].
SCORING: +5 points per correct response; -4 points per wrong/skipped question up to last attempted. Zero after last attempted.

SECTION 1: ADVANCED RATIONAL OPERATIONS & POWERS

Multi-Stage Rational Fractions, Decimal Division & Whole-Number Integer Powers

MODE: [123] ARITHMETIC

- G6-1.

215.6 + 348.2 - 148.5

1 = _____
- G6-2.

(42.5 × 16.8) + 145.0

2 = _____
- G6-3.

(640 - 285) / 22.5

3 = _____
- G6-4.

(24.5 × 11.2) - (14.8 × 8.5)

4 = _____
- G6-5.

156.4 ÷ 3.4

5 = _____ INT
- G6-6.

4³

6 = _____ INT
- G6-7.

2⁵

7 = _____ INT
- G6-8.

5³ - 45

8 = _____ INT
- G6-9.

A microelectronics distributor receives 34 crates each containing 28 boxed StackCalc microcontroller kits priced at \$16.50 each. Calculate the total wholesale value in dollars.

9 = \$ _____
- G6-10.

Flexible 1.75 mm TPU 3D printing filament weighs 5.25 grams per meter. How many meters of filament are on a 12.60 kilogram commercial shipping reel?

10 = _____ m

SECTION 2: FRACTION DIVISION & RATIO STUDIO

Fraction by Fraction Quotients, Mixed Numbers & Rate Simplification with [SIMP]

MODE: [FDISP] RATIOS

G6-11. $(5/8) \div (3/4)$ 11 = _____

G6-12. $(7/12) \div (2/3)$ 12 = _____

G6-13. $(4/5) \div (6/7)$ 13 = _____

G6-14. $2 \frac{1}{2} \div 1 \frac{1}{4}$ 14 = _____ INT

G6-15. $3 \frac{3}{4} \div 1 \frac{1}{2}$ 15 = _____

G6-16. 255 miles / 4.25 hours 16 = _____ mph

G6-17. $48/84$ [SIMP] 17 = _____

G6-18. $72/108$ [SIMP] 18 = _____

G6-19. A maker cuts an extruded aluminum 3D printer frame rail measuring $7 \frac{1}{2}$ feet long into smaller bracket supports measuring $1 \frac{1}{4}$ feet each. How many smaller supports can be cut?
19 = _____

G6-20. A two-part polyurethane casting mix for mechanical keycaps requires $\frac{3}{4}$ cup of activator for every $2 \frac{1}{2}$ cups of resin base. How many cups of activator are required for a batch using 10 cups of resin base?
20 = _____ cups

SECTION 3: PERCENTAGES, DISCOUNTS & SALES TAX

Percent of Quantities, Promotional Discounts, Sales Tax & Percent Change

MODE: [%] PERCENT

G6-21. 18% of 450 **21 =** _____ INT

G6-22. 35% of 280 **22 =** _____ INT

G6-23. 12.5% of 640 **23 =** _____ INT

G6-24. \$75.00 - 20% **24 =** _____ \$

G6-25. \$120.00 + 8.25% **25 =** _____ \$

G6-26. \$95.00 × 0.75 **26 =** _____ \$

G6-27. Percent increase: 40 to 50 **27 =** _____ %

G6-28. Percent decrease: 80 to 60 **28 =** _____ %

G6-29. A digital temperature-controlled soldering station originally priced at \$95.00 is discounted by 25%. With an 8.25% sales tax applied to the discounted sale price, calculate the total final purchase cost in dollars.

29 = \$ _____

G6-30. An expedited PCB prototype fabrication invoice totals \$68.40. If the customer adds an 18% express courier shipping fee, what is the total amount paid in dollars?

30 = \$ _____

SECTION 4: GEOMETRIC AREA & CIRCLE PERIMETERTriangle Area ($\frac{1}{2} b h$), Parallelograms, Trapezoids & Circumference using π

MODE: [123] GEOMETRY

- G6-31.** Triangle Area: $\frac{1}{2} \times 18.4 \times 12.5$ **31** = _____ cm^2
- G6-32.** Triangle Area: $\frac{1}{2} \times 24.6 \times 15.0$ **32** = _____ m^2
- G6-33.** Parallelogram Area: 22.5×14.0 **33** = _____ m^2
- G6-34.** Trapezoid Area: $\frac{1}{2} \times (16.4 + 24.8) \times 11.5$ **34** = _____ m^2
- G6-35.** Circumference: $\pi \times 32.4$ **35** = _____ cm
- G6-36.** Circumference: $2 \times \pi \times 16.5$ **36** = _____ m
- G6-37.** Circumference: $\pi \times 45.0$ **37** = _____ in
- G6-38.** Prism Volume: $18.5 \times 14.2 \times 9.5$ **38** = _____ cm^3
- G6-39.** A 3D printed triangular stiffener bracket for a 3D printer gantry has a horizontal base of 14.5 feet and a vertical height of 22.0 feet. Calculate the total surface area of the bracket in square feet.
39 = _____ ft^2
- G6-40.** A 3D printer GT2 timing belt pulley has a pitch diameter of 26.0 inches. How many inches does the printer carriage travel in one complete revolution of the pulley?
40 = _____ in

SECTION 5: PROPORTIONAL REASONING & REAL-WORLD LABS

Solving Proportions, Travel & Fuel Consumption Rates & Wholesale Markups

MODE: [123] PROPORTIONS

- G6-41.** Proportion: $x/12 = 25/30$ **41 =** _____ INT
- G6-42.** Proportion: $18/x = 24/36$ **42 =** _____ INT
- G6-43.** $(148.0 - 24.5) / (5.60 \times 7.50)$ **43 =** _____
- G6-44.** $1 / (1/12.5 + 1/18.5)$ **44 =** _____
- G6-45.** $(32.5 + 21.5) \times 14.2 \div 2.0$ **45 =** _____
- G6-46.** 360 miles $\div$ 24 mpg **46 =** _____ gal
- G6-47.** $(45 \times 12) + (35 \times 18) - 120$ **47 =** _____ INT
- G6-48.** $\$185.00 \times 1.15 \times 0.90$ **48 =** _____ \$
- G6-49.** Two automated guided vehicles (AGVs) in an electronics plant separated by 92.0 miles travel directly toward each other at steady speeds of 22.5 mph and 28.5 mph. In how many minutes will they meet?
49 = _____ min
- G6-50.** A multi-layer PCB layout CAD view uses a display scale of 1.00 inch = 48.0 miles. If two microcontroller pins are 6.40 inches apart on the screen, calculate the actual physical distance in miles.
50 = _____ mi