

2026 TMSCA / UIL MIDDLE SCHOOL CHAMPIONSHIP EXAM

JUNIOR HIGH / MIDDLE SCHOOL DIVISION • 50 PROBLEMS • 30-MINUTE SPEED SPRINT

// OFFICIAL CONTESTANT IDENTIFICATION

CONTESTANT NAME: _____

SCHOOL / CAMPUS: _____

GRADE LEVEL: [] 6 [] 7 [] 8

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.

- 26MS-1. 34.5 + 89.2 - 28.7 1 = _____
- 26MS-2. (12.4 × 6.5) + 48.2 2 = _____
- 26MS-3. (145 - 58.4) / 14.2 3 = _____
- 26MS-4. (48.6 × 15.2) / (8.4 + 12.8) 4 = _____
- 26MS-5. 1 / 18.5 + 1 / 24.0 5 = _____
- 26MS-6. $\sqrt{(24.5^2 + 32.8^2)}$ 6 = _____
- 26MS-7. 4500 / (12.5 × 8.4) 7 = _____
- 26MS-8. $(14.2 + 28.5)^2$ 8 = _____
- 26MS-9. A modular electronics component organizer case priced at \$45.00 is discounted by 20%. With 8.25% sales tax, find the total purchase cost.

9 = \$ _____
- 26MS-10. A 3D printer linear guide rail travel length is 42.5 meters. Convert this length to feet (1 meter = 3.28084 feet).

10 = _____ ft

26MS-11. $(\sqrt{289} + 45.2) / 8.65$ **11 =** _____

26MS-12. $\sqrt{(96 + \sqrt{(45 + 82)})}$ **12 =** _____

26MS-13. $(64.2^{\circ} - 28.5^{\circ}) / (14.2 + 18.6)$ **13 =** _____

26MS-14. $\sqrt{[(85 \times 24.5) / 16.8]}$ **14 =** _____

26MS-15. $\sqrt[3]{(32.5 + 48.2 \times 6.5)}$ **15 =** _____

26MS-16. $(1/6.4 - 1/14.5)^2$ **16 =** _____

26MS-17. $18.4 + 24.6 / [6.2 + (8.5 / 2.4)]$ **17 =** _____

26MS-18. $[(42.5 + 18.2) / (34 - 16.5)]^{1.8}$ **18 =** _____

26MS-19. 3D printer A can print a full batch of modular math blocks in 2.50 hours, while 3D printer B requires 3.80 hours. How many hours will it take to print the batch working together?

19 = _____ hrs

26MS-20. A circular 3D printer rotating print bed has a radius of 14.5 meters. Determine the total surface area of the print bed in square meters.

20 = _____ m²

26MS-21. $48.5^{1.6} + 18.2^{-0.5}$ **21 =** _____

26MS-22. $64.5 \times \sin(35.4^\circ)$ **22 =** _____

26MS-23. $82.0 \times \cos(48.2^\circ)$ **23 =** _____

26MS-24. $\tan(62.5^\circ) / 4.8$ **24 =** _____

26MS-25. $\sqrt{(\sqrt{340} + \sqrt{95})}$ **25 =** _____

26MS-26. $(84 \times 12.5) / \sqrt{(45 + 38)}$ **26 =** _____

26MS-27. $\log(580) + \log(24.5)$ **27 =** _____

26MS-28. $(28.4^2 + 19.5^2) / (34.2 - 12.8)$ **28 =** _____

26MS-29. Two educational mobile robotics carts 45.0 miles apart travel toward each other at speeds of 12.0 mph and 15.5 mph. In how many minutes will they meet?

29 = _____ min

26MS-30. An articulated support strut for a 3D printer overhead spool rack is 26.0 feet long with its base placed 6.50 feet away on level ground. How high up the frame does the top of the strut reach in feet?

30 = _____ ft

26MS-31. $\sqrt[3]{(14.5^3 - 8.2^3)}$ 31 = _____

26MS-32. $\sin^2(28.4^\circ) + \cos^2(28.4^\circ)$ 32 = _____ INT

26MS-33. $\arctan(45 / 28)$ [deg] 33 = _____

26MS-34. $\sqrt{[\pi(18.4^2) + \pi(11.2^2)]}$ 34 = _____

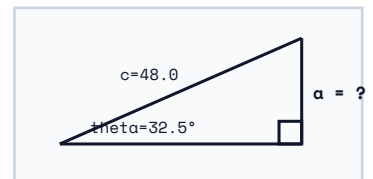
26MS-35. $(1/4.8 + 1/7.5)^{-1.25}$ 35 = _____

26MS-36. $12 \text{ C } 4$ 36 = _____ INT

26MS-37. $8 \text{ P } 3$ 37 = _____ INT

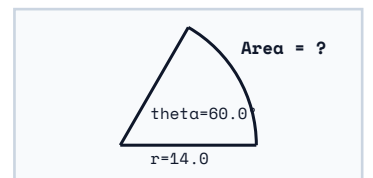
26MS-38. $(e^{1.2} - 1) / 2.4$ 38 = _____

26MS-39. RIGHT TRIANGLE: In the right triangle below, hypotenuse $c = 48.0$ cm and angle $\theta = 32.5^\circ$. Find opposite leg a .



39 = _____ cm

26MS-40. CIRCULAR SECTOR: For the sector diagrammed below, radius $r = 14.0$ m and central angle $\theta = 60.0^\circ$. Determine the sector area in square meters.



40 = _____ m^2

26MS-41. $\sqrt{(54.2^2 + 38.6^2)} / (12.4 + \sqrt{28})$ **41 =** _____

26MS-42. $(24.5^{2.2} - 14.2^{1.8}) / (8.5 \times 3.4)$ **42 =** _____

26MS-43. $\ln(145) / \log(145)$ **43 =** _____

26MS-44. $\sqrt{(28 + \sqrt{(28 + \sqrt{28})})}$ **44 =** _____

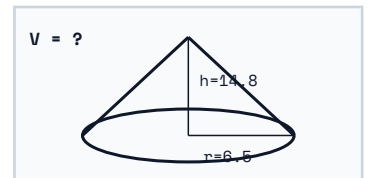
26MS-45. $(15 \text{ C } 5) / (10 \text{ C } 3)$ **45 =** _____

26MS-46. $1 / (1/8.5 + 1/14.2 + 1/22.0)$ **46 =** _____

26MS-47. $\cos^2(36.0^\circ) + \sin(54.0^\circ)$ **47 =** _____

26MS-48. $\sqrt{[(48.5 \times 18.2 \times 9.4) / (3.2 \times 4.5)]}$ **48 =** _____

26MS-49. RIGHT CIRCULAR CONE: A cone has base radius $r = 6.50$ cm and height $h = 14.8$ cm. Find the volume in cubic centimeters.



49 = _____ cm^3

26MS-50. A 3D printed electronics project enclosure measures 18.5 cm long, 12.4 cm wide, and 8.50 cm high. Determine its internal volume in cubic centimeters.

50 = _____ cm^3