

# MATHCOUNTS®

## 2023 STATE COMPETITION Answer Key

The appropriate units (or their abbreviations) are provided in the answer blanks.

**Note to coordinators:** Answers to the Tiebreaker Round problems appear in the Tiebreaker Round Booklet.

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## Sprint Round

1. 2

2. 12.5

3. 86

4. 55 degrees

5. 3

6. 2039

7. 81 mm<sup>2</sup>

8.  $4\frac{1}{6}$  cups

9. 13

10. 24 minutes

11. 4 routes

12. 5 baskets

13. 3 hours

14. 25

15. -3

## Sprint Round

16.  $\underline{2\sqrt{13}}$  cm

17.  $\underline{8}$  meters

18.  $\frac{-2 + \sqrt{21}}{\text{or } \sqrt{21} - 2}$

19.  $\underline{\frac{27}{49}}$

20.  $\underline{146}$

21.  $\underline{91}$  ordered  
triples

22.  $\underline{\frac{1}{6}}$

23.  $\underline{46}$  degrees

24.  $\underline{4}$  entries

25.  $\underline{73}$

26.  $\underline{10,201}$  locations

27.  $\underline{8\sqrt{2}}$  cm<sup>2</sup>

28.  $\underline{-2.3}$

29.  $\underline{192}$

30.  $\underline{\frac{100}{21}}$

## Target Round

1. 13 values

3. 53 Sundays

5. 18

7. 849,660 m<sup>2</sup>

2. 3

4.  $\frac{28 - 5\pi \text{ cm}^2}{\text{or } -5\pi + 28}$

6. 25 ways

8. 5320

## Team Round

1.  $\underline{6}$

2.  $\underline{121}$   $\frac{7\text{th}}{\text{graders}}$

3.  $\underline{9}$

4.  $\underline{52}$  %

5.  $\underline{1.4}$   $\text{units}^2$

6.  $\underline{60}$   $\frac{\text{ordered}}{\text{pairs}}$

7.  $\underline{\frac{3}{32}}$

8.  $\underline{71}$   $\frac{\text{config-}}{\text{urations}}$

9.  $\underline{33,800}$

10.  $\underline{2\sqrt{13}}$  cm

## Countdown Round

1.  $\frac{38 \text{ (band members)}}{2}$

2.  $\frac{\quad}{3}$

3.  $\frac{58 \text{ (plates)}}{\quad}$

4.  $\frac{3700 \text{ (numbers)}}{\quad}$

5.  $\frac{9.6 \text{ (mi/h)}}{\quad}$

6.  $\frac{97}{\quad}$

7.  $\frac{10 \text{ (meters)}}{7}$

8.  $\frac{\quad}{8}$

9.  $\frac{13}{8}$

10.  $\frac{\quad}{3}$

11.  $\frac{-126}{\quad}$

12.  $\frac{36 \text{ (segments)}}{\quad}$

13.  $\frac{\sqrt{3}}{\quad}$

14.  $\frac{5}{\quad}$

15.  $\frac{100}{\quad}$

16.  $\frac{13 \text{ (digits)}}{\quad}$

17.  $\frac{18 \text{ (\%)}}{\quad}$

18.  $\frac{0 \text{ (positive integers)}}{\quad}$

19.  $\frac{45 \text{ (degrees)}}{\quad}$

20.  $\frac{10,575 \text{ (ft}^3\text{)}}{\quad}$

21.  $\frac{4.5}{2}$

22.  $\frac{\quad}{3}$

23.  $\frac{2}{\quad}$

24.  $\frac{30\pi \text{ (inches)}}{9}$

25.  $\frac{\quad}{2}$

26.  $\frac{-3}{\quad}$

27.  $\frac{10 \text{ (years old)}}{\quad}$

28.  $\frac{56 \text{ (cm)}}{\quad}$

29.  $\frac{17 \text{ (\%)}}{\quad}$

30.  $\frac{14\frac{2}{9} \text{ (ounces)}}{\quad}$

31.  $\frac{184,000}{\quad}$

32.  $\frac{-1}{4}$

33.  $\frac{\quad}{91}$

34.  $\frac{132 \text{ (laps)}}{\quad}$

35.  $\frac{5}{89}$

36.  $\frac{\quad}{99}$

37.  $\frac{10}{\quad}$

38.  $\frac{72 \text{ (playlists)}}{\quad}$

39.  $\frac{8}{\quad}$

40.  $\frac{8}{\quad}$

### Countdown Round

41.  $\frac{25}{144}$

42. 9

43. 9.6

44. 40.5 (miles)

45. 21

46. 420

47. 4

48. 13

49. 3.75

50.  $\frac{5}{24}$  (cups)

51. 8 (percent)

52. 15

53. 128

54. -452

55.  $\frac{1}{2}$

56. 2

57. 8

58. 298,800 (joules)

59. 3 (times)

60. 27 (pictures)

61. 125 (adult tickets)

62. 30 (mi/h)

63. 18 (globbers)

64. 5900 (seats)

65. 110 (dollars)

66. 7 (hexagons)

67. 0

68. 56 (years old)

69. 9

70. 18 (programs)

71. 17

72. 240

73. 45 (numbers)

74. 160 (degrees)

75. 101 (locations)

76. 41

77.  $\frac{1}{8}$

78.  $\frac{5}{3}$

79.  $\frac{3}{4}$

80. 24 (feet)

