PLACE LABEL BELOW

Name: _____ School: _____

SS/ID Number: _____ City: _____

Grade: 4   5   6   7   8   Classification: 1A 2A 3A 4A 5A 6A
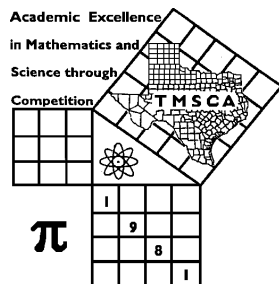
T M S C A   M I D D L E   S C H O O L

N U M B E R   S E N S E

T E S T 7 ©

J A N U A R Y   1 5 , 2 0 2 2

GENERAL DIRECTIONS

1. Write only the requested information on this coversheet. Do not make any additional marks on this cover sheet.
2. You will be given 10 minutes to take this test.
3. There are 80 problems on the test.
4. Write in ink only! It would be advantageous to use <u>non-black</u> ink.
5. Solve as many problems as you can in the order that they appear.
6. Problems that are skipped are considered wrong.
7. Problems that appear after the last attempted problem do not count either for or against you.
8. ALL PROBLEMS ARE TO BE SOLVED MENTALLY! [No scratch work!]
9. Only the answer may be written in the answer blank.
10. Starred [*] problems require approximate INTEGRAL answers that are within 5% of the exact answers. All other problems require exact answers.
11. All problems answered correctly are worth <u>FIVE</u> points. <u>FOUR</u> points will be deducted for all problems answered incorrectly or skipped before the last problem attempted.

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(1) $659 - 88 =$ _____

(2) $383 + 617 =$ _____

(3) $\dfrac{7}{8} =$ _____ %

(4) $12.2 \times 0.5 =$ _____

(5) $34 \times 25 =$ _____

(6) $13^2 =$ _____

(7) $125\% =$ _____ (mixed number)

(8) $4 \times 14 + 16 \times 4 =$ _____

(9) $\dfrac{6}{7} - \dfrac{1}{2} =$ _____ (fraction)

*(10) $2345 + 678 + 91 =$ _____

(11) $65^2 =$ _____

(12) $33\dfrac{1}{3}\%$ of 69 is _____

(13) $103 \times 111 =$ _____

(14) $73 \times 33 =$ _____

(15) $\dfrac{5}{13} \times \dfrac{26}{35} =$ _____ (fraction)

(16) The largest prime number less than 20 is ____

(17) 60% of 80 plus 12 is _____

(18) $\dfrac{7}{40} =$ _____ (decimal)

(19) $6\dfrac{1}{4} - 3\dfrac{1}{3} =$ _____ (mixed number)

*(20) $44 \times 555 =$ _____

(21) $5\dfrac{1}{3} \times 5\dfrac{2}{3} =$ _____ (mixed number)

(22) $433 \times 12 =$ _____

(23) $0.181818\ldots =$ _____ (fraction)

(24) What is 7% tax on $44.00? $_____

(25) The additive inverse of -12 is _____

(26) If $4x - 5 = 19$, then $x^2 =$ _____

(27) The GCD of 18 and 63 is _____

(28) 62 base 8 = _____ base 10

(29) $\dfrac{3}{5} + \dfrac{3}{10} + \dfrac{3}{20} =$ _____ (mixed number)

*(30) $23446 \div 25 =$ _____

(31) $|3-7| + 8 + |7-3| =$ _____

(32) $737 \times 111 =$ _____

(33) $35 \times 75 =$ _____

34) $\dfrac{2}{3}$ of a gallon = _____ in³

(35) If $5^{8x} = 625$, then $2x =$ _____

(36) $\dfrac{7}{9} + \dfrac{9}{7} =$ _____ (mixed number)

(37) $49^2 =$ _____

(38) If 8 ads cost $16.64, then 12 ads cost $_____

(39) Two numbers have a sum of 30, a product of 216, and a positive difference of _____

*(40) 36 yards = _____ inches

(41) $\left(\dfrac{7}{6}\right)^2 =$ _____ (mixed number)

(42) If the perimeter of a square is 120 m, then the area of the square is _____ m²

(43) The sum of the prime divisors of 105 is _____

(44) $A = \{5, 7, 12, 19, 31, a, b, 131, ...\}$. $b =$ _____

(45) The sum of the roots of
$2x^3 - 8x^2 - 22x + 60 = 0$ is _____

(46) $286 \times 56 =$ _____

(47) $24^2 + 24 =$ _____

(48) $678_9 - 483_9 =$ _____ $_9$

(49) $43658 \div 11$ has a remainder of _____

*(50) $\sqrt{534} \times \sqrt{757} =$ _____

(51) 66 ft/s = _____ mph

(52) The fifth pentagonal number is _____

(53) $4^{-3} + 4^{-2} + 4^{-1} + 4^0 =$ _____

(54) $(15 \times 17 + 20 \times 29) \div 7$ has a remainder of ___

(55) $(905)^2 =$ _____

(56) $5! + 4! + 3! + 2! + 1! =$ _____

(57) 543 base 8 = _____ base 2

(58) If $48^2 - 42^2 = 18k$, then $k =$ _____

(59) $\dfrac{3}{8} - \dfrac{8}{25} =$ _____ (fraction)

*(60) $(.222)(1922) =$ _____

(61) The probability of rolling two
dice and getting a sum of 4 or 8 is _____

(62) The product of the roots of
$3x^3 - 12x^2 - 33x + 90 = 0$ is _____

(63) If the height of an equilateral
triangle is $14\sqrt{3}$, then the perimeter is _____

(64) $9 \times \dfrac{11}{15} =$ _____ (mixed number)

(65) $14^3 - 15^3 =$ _____

(66) $4 + 7 + 10 + 13 + 16 + ... + 64 + 67 =$ _____

(67) $222 \times \dfrac{5}{27} =$ _____

(68) The volume of a 6 in by 8 in
by 10 in rectangular prism is _____ in^3

(69) $\left(\sqrt[3]{1331}\right)^2 =$ _____

*(70) $\left(e^5 \times \pi^5\right) \div 3 =$ _____

(71) $566\dfrac{2}{3}\%$ of 18 is _____

(72) $(8)^{-3} =$ _____

(73) $\sqrt[3]{6859} =$ _____

(74) The first 4 digits of the
decimal for $\dfrac{214}{333}$ are 0._____

(75) If m and n are natural numbers
and $4\dfrac{2}{m} \times n\dfrac{1}{2} = 23$, then $m + n =$ _____

(76) $(9)(13)(21)(37) =$ _____

(77) The sum of the positive
integral divisors of 24 is _____

(78) The product of the
coefficients of $(2x + 3y)^2$ is _____

(79) If the area of a circle is
121π cm, then the circumference is _____ π cm.

*(80) The number of minutes
in the month of January is _____

(1) 571

(2) 1000

(3) $87\frac{1}{2}, 87.5, \frac{175}{2}$

(4) $6.1, 6\frac{1}{10}, \frac{61}{10}$

(5) 850

(6) 169

(7) $1\frac{1}{4}$

(8) 120

(9) $\frac{5}{14}$

*(10) 2959 − 3269

(11) 4225

(12) 23

(13) 11433

(14) 2409

(15) $\frac{2}{7}$

(16) 19

(17) 60

(18) .175

(19) $2\frac{11}{12}$

*(20) 23199 − 25641

(21) $30\frac{2}{9}$

(22) 5196

(23) $\frac{2}{11}$

(24) 3.08

(25) 12

(26) 36

(27) 9

(28) 50

(29) $1\frac{1}{20}$

*(30) 891 − 984

(31) 16

(32) 81807

(33) 2625

(34) 154

(35) 1

(36) $2\frac{4}{63}$

(37) 2401

(38) 24.96

(39) 6

*(40) 1232 − 1360

(41) $1\frac{13}{36}$

(42) 900

(43) 15

(44) 81

(45) 4

(46) 16016

(47) 600

(48) 185

(49) 10

*(50) 605 − 667

(51) 45

(52) 35

(53) $\frac{85}{64}$ or $1\frac{21}{64}$

(54) 2

(55) 819025

(56) 153

(57) 101100011

(58) 30

(59) $\frac{11}{200}$

*(60) 406 − 448

(61) $\frac{2}{9}$

(62) −30

(63) 84

(64) $6\frac{3}{5}$

(65) −631

(66) 781

(67) $41\frac{1}{9}$ or $\frac{370}{9}$

(68) 480

(69) 121

*(70) 14383 − 15896

(71) 102

(72) $\frac{1}{512}$

(73) 19

(74) 6426

(75) 16

(76) 90909

(77) 60

(78) 432

(79) 22

*(80) 42408 − 46872