


## TMSCA MIDDLE SCHOOL NUMBER SENSE <br> TEST \#1 © <br> OCTOBER22, 2016

## GENERAL DIRECTIONS

1. Write only the requested information on this coversheet. Do not make any additional marks on this coversheet.
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 non-black 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 FIVE points. FOUR points will be deducted for all problems answered incorrectly or skipped before the last problem attempted.

TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA TMSCA

## 2016-2017 TMSCA Middle School Number Sense Test \#1

(1) $252 \div 6=$
(2) $30 \times 47=$ $\qquad$
(3) $\frac{5}{11}=$ $\qquad$ $\%$ (mixed number)
(4) $\mathbf{2 0 1 7} \times \mathbf{1 7}=$ $\qquad$
(5) $10 \times 9 \times 8 \div 6=$
(6) $0.85=$ $\qquad$ (fraction)
(7) $234567 \div 3$ has a remainder of
(8) $\mathbf{1 3} \times 31=$ $\qquad$
(9) $\frac{8}{9} \times 999=$ $\qquad$
*(10) $2016-2017+2018+9137=$
(11) Which of the following is greater, 0.44 or $\frac{1}{2}$ ?
(12) 3 gallon +5 quarts $=$ $\qquad$ quarts
(13) $83 \times 17+17 \times 17=$
(14) $11^{2}=$
(15) $235 \times 50=$ $\qquad$
(16) $\frac{5}{4}+\frac{4}{5}=$ $\qquad$ (improper fraction)
(17) $35^{2}=$ $\qquad$
(18) $63 \times 66 \frac{2}{3}=$ $\qquad$
(19) How many digits are in $993^{\mathbf{2}}$ ?
*(20) $83 \times 8999=$
(21) $1.4^{2}=$ $\qquad$
(22) $45 \times 62=$
(23) 5 feet $=$ $\qquad$ inches
(24) Find the number of prime numbers that are between 80 and 92 .
(25) If the base of a rectangle is 7 , and the height is four more than the base, then the area is $\qquad$
(26) The GCF of 21 and 24 is $\qquad$
(27) The perimeter of a regular pentagon with side length 8.6 cm is $\qquad$ cm
(28) $4 \times 11 \div 3+13 \div 3=$ $\qquad$
(29) $114 \times 104=$ $\qquad$
*(30) $321 \times 648=$ $\qquad$
(31) The largest angle in a parallelogram that has one angle of $83^{\circ}$ is $\qquad$ $\circ$
(32) $19 \frac{3}{7} \times 19 \frac{4}{7}=$ $\qquad$ (mixed number)
(33) $2+4+6+\ldots+32=$ $\qquad$
(34) $\mathbf{2 8}$ has how many positive integral divisors? $\qquad$
(35) If Deonte invests $\mathbf{\$ 2 0 0 0}$ at $\mathbf{6 \%}$ interest for two years, how much interest will he earn? \$ $\qquad$
(36) The sum of the positive integral divisors of 15 is $\qquad$
(37) $29 \times 89=$ $\qquad$
(38) $\left(12^{2}+36^{2}\right)+\left(12^{2}+24^{2}\right)=$ $\qquad$
(39) If $f(x)=2 x^{2}-11 x+7$, then $f(5)=$ $\qquad$
*(40) $\sqrt{4399999}=$ $\qquad$
(41) If $\frac{2 x+13}{4}=7$, then $x=$ $\qquad$ (mixed number)
(42) A square of area 72 has a diagonal length of $\qquad$

## Copyright © 2016 by TMSCA

(43) $11 \times \frac{2}{3}=$ $\qquad$ (mixed number)
(44) $\sqrt{1369}=$ $\qquad$
(45) $(1+3+5+\ldots+27)-(1+3+5+\ldots+19)=$ $\qquad$
(46) If $f(x)=\frac{15}{x^{2}}$, then $f(5)=$ ___(fraction)
(47) $2+3+4+\ldots+20=$ $\qquad$
(48) A regular decagon has an interior angle of measure $\qquad$ degrees
(49) $\mathbf{4 3}_{10}=$ $\qquad$ - 6
*(50) $18 \times 11 \times 799=$ $\qquad$
(51) $13 \times \frac{13}{10}=$ $\qquad$ (mixed number)
(52) $18 \times \frac{19}{23}=$ $\qquad$ (mixed number)
(53) How many terms does the sequence $2,5,8,11, \ldots, 152$ have? $\qquad$
(54) $1=\frac{11}{17} \times$ $\qquad$ (mixed number)
(55) If the area of a circle with circumference $18 \pi \mathrm{~cm}^{2}$ is $\mathrm{k} \pi \mathrm{cm}^{2}$, then $\mathrm{k}=$ $\qquad$
(56) $43_{8}-15_{8}=$ $\qquad$ _ 8
(57) $\sqrt[3]{1728}=$ $\qquad$
(58) $\left(6^{4}+9^{4}\right) \div 5$ has a remainder of $\qquad$
(59) A junior high football coach buys 98 sets of shoulder pads at $\$ 92$ each.
How much is the total price? \$ $\qquad$
*(60) The volume of a sphere with radius 5 is $\qquad$
(61) The set $\{\mathbf{l}, \mathrm{e}, \mathrm{m}, \mathrm{o}, \mathrm{n}, \mathrm{s}\}$ has how many 3 -element subsets? $\qquad$
(62) $52^{2}+15^{2}=$
(63) If $3 x-5>19$, then the smallest integer solution of $x$ is $\qquad$
(64) If three times a number is the same as the sum of the number and 8 , then the number is $\qquad$
(65) . $242424 \ldots=$ $\qquad$ (fraction)
(66) Find the slope of the line perpendicular to $3 x+5 y=-3$. $\qquad$
(67) What is the probability of drawing 2 consecutive hearts from a standard 52-card deck without replacement? $\qquad$
(68) If the $y$-intercept of $2 x+7 y=C$ is 8 , then find the $x$-intercept.
(69) If the hypotenuse of a right triangle with integer sides is 41 , then the perimeter is $\qquad$
*(70) $186 \times 331 \times \frac{1}{6}=$ $\qquad$
(71) If $P$ and $Q$ are roots of $2 x^{2}+b x+10=0$, and $P+Q=5$, then $b=$ $\qquad$
(72) If $f(x)=2 x^{3}+3$, then $f(4)=$ $\qquad$
(73) Find the probability of rolling a sum of 11 when rolling two 6 -sided die. $\qquad$
(74) How many distinct four letter arrangements can be made from $\{p, a, p, a\}$ ? $\qquad$
(75) If $4 \times 5!+6!=k \times 5!$, then $k=$ $\qquad$
(76) Find the length of a side of a rhombus if the lengths of the two diagonals are 24 and 10. $\qquad$
(77) $\mathbf{2 0 \%}$ of 90 is $\mathbf{4 0 \%}$ of $\qquad$
(78) $60 \mathrm{mph}=$ $\qquad$ feet per second
(79) If $\log _{16} x=\frac{3}{4}$, then $x=$ $\qquad$
*(80) 2016 yards = $\qquad$ inches
(1) 42
(2) 1410
(3) $45 \frac{5}{11}$
(4) 34289
(5) 120
(6) $\frac{17}{20}$
(7) 0
(8) 403
(9) 888
*(10) 10597 - 11711
(11) $\frac{1}{2}$
(12) 17
(13) 1700
(14) 121
(15) 11750
(16) $\frac{41}{20}$
(17) 1225
(18) 4200
(19) 6
*(20) 709572-784262
(21) 1.96
(22) 2790
(23) 60
(24) 2
(25) 77
(26) 3
(27) 43
(28) 19
(29) 11856
*(30) 197608-218408
(31) 97
(32) $380 \frac{12}{49}$
(33) 272
(34) 6
(35) 240.00
(36) 24
(37) 2581
(38) 2160
(39) 2
*(40) 1993-2202
(41) $7 \frac{1}{2}$
(42) 12
(43) $7 \frac{1}{3}$
(44) 37
(45) 96
(46) $\frac{3}{5}$
(47) 209
(48) 144
(49) 111
*(50) 150292-166112
(51) $16 \frac{9}{10}$
(52) $14 \frac{20}{23}$
(53) 51
(54) $1 \frac{6}{11}$
(55) 81
(56) 26
(57) 12
(58) 2
(59) 9016.00
*(60) 498-549
(61) 20
(62) 2929
(69) 90
*(70) 9748-10774
(63) 9
(64) 4
(65) $\frac{8}{33}$
(66) $\frac{5}{3}$
(67) $\frac{1}{17}$
(68) 28
(71) -10
(72) 131
(73) $\frac{1}{18}$
(74) 6
(75) 10
(77) 45
(78) 88
(79) 8
*(80) 68948-76204

