2018 McNabb GDCTM Contest Answer Sheet

Name: __Key__   School: _____   Date: _____

Contest Taking (Circle One):
(Pre-algebra)   Algebra I   Geometry   Algebra II   Pre-calculus   Calculus

DIRECTIONS:

1. You are NOT permitted to use a calculator or any other electronic device. You have 60 minutes for Geometry and above. You have 45 minutes for Pre-Algebra or Algebra I.

2. All answers should be in standard simplified from unless otherwise stated. All variables are assumed to stand for real numbers unless otherwise stated.

1.	6.	11.
7	64	15

2.	7.	12.
460	13	32

3.	8.	13.
400	97	$8\sqrt{2}$

4.	9.	14.
3	8	15,000

5.	10.	15.
1,155,000	40	7921

SCORE:_____

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1. 147

6. any one of:
$$\frac{a^2(a-1)}{2(a+1)} , \frac{a^2(1-a)}{2(a+1)}$$
or absolute value of above or equivalent

11. $293/4$

2. 72

7. 0.524

12. 132

3. 9

8. $(3, 5/3)$

13. $3, -4$
need both

4. 420

9. $4/9$

14. just one of
$20, 40, 60, \cdots$

5. 3.14

10. 7

15. 4

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1. 400	**6.** $(3, 5/3)$	**11.** 24
2. 64	**7.** $-4, 3$ need both	**12.** $49:1$ or 49
3. $8\sqrt{2}$	**8.** 0.524	**13.** $(x^2-3x-2)(x^2-3x+2)$
4. 3	**9.** any one of: $\dfrac{a^2(a-1)}{2(a+1)}$ or $\dfrac{a^2(1-a)}{2(a+1)}$	**14.** $\dfrac{3-\sqrt{5}}{2}$
5. $54 + \dfrac{225\sqrt{3}}{4}$	**10.** 4	**15.** $3/5$

SCORE: _____

or $\dfrac{a^2 \cdot |a-1|}{2(a+1)}$ or equivalent

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1. 3	6. 49 (or $49:1$)	11. $(x^2-3x-2)(x^2-3x+2)$
2. 9	7. 314	12. 9
3. $20/27$	8. $1/3$	13. 20
4. 147	9. 42π	14. 6
5. Count any of these correct! $\dfrac{a^2(a-1)}{2(a+1)}$, $\dfrac{a^2(1-a)}{2(a+1)}$,	10. i	15. 46

SCORE: _____

$\longrightarrow$ ur $\dfrac{a^2 \cdot |1-a|}{2(a+1)}$ or any equivalent

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2. All answers should be in standard simplified from unless otherwise stated. All variables are assumed to stand for real numbers unless otherwise stated.

1. 460	6. 7921	11. 15
2. 1/3	7. 4/9	12. 6
3. −60	8. 20, 40, 60, ..., need one	13. $\frac{1}{27}\binom{27}{13}$ or equivalent
4. 293/4	9. (0, 0, 0) (7, 7, 7) (5/2, 5, 15/2) need all	14. 46
5. 1, −2 need both	10. 3	15. −1

SCORE: _____

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1. 945	**6.** $3\sqrt{3}/16$	**11.** 1
2. 1	**7.** $\top$	**12.** (or $-12 \cdot \ln(1/2)$) $12 \cdot \ln 2$
3. 1024	**8.** $[0, 8/3]$ or $(0, 8/3)$	**13.** $3 + x + \frac{3}{2}x^2 + \frac{1}{3}x^3$
4. $32 \cdot e^{-x} \cdot \sin x$	**9.** $1/2$	**14.** $2t + 1$ or $2x + 1$
5. $a \le -2$ or $(-\infty, -2]$	**10.** $1/4$	**15.** 4

SCORE: _____