1. The number 0.127 is how much greater than $1 / 8$ ?
A. $1 / 2$

O
B. $2 / 10$

O
C. $1 / 50$

0
D. $1 / 500$

0
E. 2/500
2. Which of the following could not be the lengths of the sides of a right angled triangle?

Select ALL such sets.
$\Gamma_{\text {A. 3, 4, } 5}$
$\ulcorner$
B. $5,12,13$

Г
C. $8,15,17$
$\ulcorner$
D. $12,15,18$

Г
E. 9, 12, 15
$\ulcorner$
F. 12, 16, 20
$\Gamma$
G. $10,24,25$

3. Two equal circles are cut out of a rectangle of card of dimensions 16 by 8 . The circles have the maximum diameter possible. What is the approximate area of the paper remaining after the circles have been cut out?
C A. 104
© B. 78
C. 54
D. 27
C. 13

$$
\frac{a^{2}-b^{2}}{a+b}=
$$

4. If $a$ and $b$ are both positive, and $a \neq b$, which of the following is a simplification of the expression above?

Select one or more of the following
A. $a^{2}+b^{2}+1$
$\ulcorner$
B. $a+b$
$\ulcorner$
C. $\mathrm{a}-\mathrm{b}$
$\ulcorner$
D. $a b$
5. $x=y-(50 / y)$, where $x$ and $y$ are both $>0$

If the value of $y$ is doubled in the equation above, the value of $x$ will
O A. decrease
$\bigcirc$
B. stay the same
C. increase four fold
D. double

O
E. increase to more than double

6. $A S B$ is a quarter circle. $P Q R S$ is a rectangle with sides $P Q=8$ and $P S=6$. What is the length of the arc AQB ?
A. $5 \pi$
$\bigcirc$
B. $10 \pi$

O
C. 25

0
D. 14

0
E. 28
7. The number of degrees that the hour hand of a clock moves through between noon and 2.30 in the afternoon of the same day is
A. 720

O
B. 180

O
C. 75

O
D. 65

0
E. 60
8. Jeff takes 20 minutes to jog around the race course one time, and 25 minutes to jog around a second time. What is his average speed in miles per hour for the whole jog if the course is 3 miles long?
C A. 6
0
B. 8
C. 10

O
D. 12
C. 14

9. $A$ and $B$ are equidistant from the line I. How many circles can be drawn with their centres on line I and that pass through both $A$ and $B$ ?
C A. 1
$\bigcirc$
B. 2

0
C. 3

O
D. 4

0
E. $>10$
10. A wheel has a diameter of x inches and a second wheel has a diameter of y inches. The first wheel covers a distance of $d$ feet in 100 revolutions. How many revolutions does the second wheel make in covering $d$ feet?
A. $100 x y$

0
B. $100 \mathrm{y}-\mathrm{x}$
-
C. $100 x-y$

0
D. $100 \mathrm{y} / \mathrm{x}$

O
E. $100 \mathrm{x} / \mathrm{y}$

## Answer Key

1. D
2. DG
3. D
4. C
5. E
6. A
7. C
8. B
9. E
10. E
