

## SAT Practice 3: Working with Exponentials

1. If  $g = -4.1$ , then  $\frac{-3g^2}{(-3g)^2} =$

(A) -1

(B)  $-\frac{1}{3}$ (C)  $-\frac{1}{9}$ (D)  $\frac{1}{3}$ 

(E) 1

2. If  $(200)(4,000) = 8 \times 10^m$ , then  $m =$

(A) 2

(B) 3

(C) 4

(D) 5

(E) 6

3. If  $2a^2 + 3a - 5a^2 = 9$ , then  $a - a^2 =$

(A) 1

(B) 3

(C) 6

(D) 9

(E) 12

4. If  $2^x = 10$ , then  $2^{2x} =$

(A) 20

(B) 40

(C) 80

(D) 100

(E) 200

5. If  $5^x = y$  and  $x$  is positive, which of the following equals  $5y^2$  in terms of  $x$ ?

(A)  $5^{2x}$ (B)  $5^{2x+1}$ (C)  $25^{2x}$ (D)  $125^{2x}$ (E)  $125^{2x+1}$ 

6. If  $9^x = 25$ , then  $3^{x-1} =$

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

7. If  $p = \frac{3n}{m^3}$ , then what is the effect on the value of  $p$  when  $n$  is multiplied by 4 and  $m$  is doubled?

(A)  $p$  is unchanged.(B)  $p$  is halved.(C)  $p$  is doubled.(D)  $p$  is multiplied by 4.(E)  $p$  is multiplied by 8.

8. For all real numbers  $n$ ,  $\frac{2^n \times 2^n}{2^n \times 2} =$

(A) 2

(B)  $2^n$ (C)  $2^{n-1}$ (D)  $\frac{n^2}{n+1}$ (E)  $\frac{2n}{n+1}$ 

9. If  $m$  is a positive integer, then which of the following is equivalent to  $3^m + 3^m + 3^m$ ?

(A)  $3^{m+1}$ (B)  $3^{3m}$ (C)  $3^{3m+1}$ (D)  $9^m$ (E)  $9^{3m}$