Math Drill

Time yourself from start to finish and record your time below. The SAT Non-Calculator section is all about speed and practice makes perfect!

YOUR TIME: _____

Multiplication Facts to 100 (A)

Name: _____ Date: _____ Score: ____ /100

Calculate each product.

4 × 4	8 × 10	5 × 3	8 × 5	7 × 5	6 × 4	2 × 2	8 × 9	6 × 9	8 × 4
9 × 3	4 × 6	4 × 2	4 × 3	9 × 4	8 × 2	9 × 8	3 × 4	3 × 7	2 × 9
7 × 6	2 × 5	6 × 5	5 × 6	2 × 3	8 × 8	10 × 9	3 × 5	4 × 7	3 × 3
4 × 5	3 × 6	3 × 9	9 × 6	2 × 8	9 × 10	2 × 10	6 × 7	10 × 6	4 × 8
3 × 10	3 × 8	9 × 9	10 × 2	2 × 4	10 × 10	5 × 8	6 × 2	9 × 2	8 × 6
10 × 5	5 × 4	6 × 3	8 × 3	7 × 8	4 × 9	5 × 9	6 × 8	5 × 5	5 × 10
2 × 7	5 × 2	8 × 7	10 × 3	9 × 7	4 × 10	6 × 6	3 × 2	6 × 10	10 × 4
7 × 3	7 × 9	5 × 7	2 × 6	10 × 8	7 × 7	7 × 2	7 × 4	7 × 10	9 × 5
10 × 7	4 × 8	4 × 10	4 × 9	9 × 4	10 × 7	8 × 9	7 × 5	3 × 7	6 × 7
2 × 10	7 × 10	7 × 6	10 × 5	3 × 6	9 × 10	2 × 7	8 × 8	6 × 8	8 × 3

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Unit 1 - Fundamentals of Algebra

Topic: Variables and Expressions

1

Twice the product of m and n decreased by the square of the sum of m and n.

Which of the following is an expression for the statement above?

A) $2mn-(m^2+n^2)$

B) $2mn-(m+n)^2$

C) $(m+n)^2-2mn$

D) $(m^2+n^2)-2mn$

2

The product of a number x and four decreased by twelve.

Which of the following is an expression for the statement above?

A) $4x+12$

B) $4(x+12)$

C) $4(x-12)$

D) $4x-12$

3

The quotient of 19 and a number d increased by seven.

Which of the following is an expression for the statement above?

A) $\frac{19}{d}+7$

B) $\frac{d}{19}+7$

C) $\frac{19+d}{7}$

D) $\frac{d+7}{19}$

4

Mario received y text messages each minute for 10 minutes yesterday and received t text messages each minute for 20 minutes today. What is the total number of text messages he received for two days in terms of y and t?

A) $30yt$

B) $200yt$

C) $20y+10t$

D) $10y+20t$

5

Which of the following expressions represents the product of $3k$ and the sum of m and one third of n?

A) $3km+\frac{1}{3}n$

B) $3k\cdot\frac{1}{3}(m+n)$

C) $3k(m+\frac{1}{3}n)$

D) $3k(m+n+\frac{1}{3})$

6

The difference between two numbers is eight. If the smaller number is n to the third power what is the greater number?

A) n^3-8

B) n^3+8

C) $8-n^3$

D) $8n^3$

Topic: Exponents & Order of Operations

1

$[(7^2-9)\div 8]2=$

2

$19-3[20-\frac{2^4-7}{4}\times 8]=$

3

$\frac{72\div 3^2\cdot 2}{6}=$

4

$5^3-\frac{1}{2}(12+12\div 3)=$

5

What is the value of $(\frac{2c}{a})^2-10\times\frac{(b+a)}{c}$ if $a=-2$, $b=3$, and $c=5$?

6

What is the value of $9-2x\div(z-y)^3$ if $x=4$, $y=-1$, and $z=-3$?

7

What is the value of $\frac{7\div(q)^2\cdot 2}{2p}\cdot\frac{-p+6q-r}{-q}$ if $p=4$, $q=\frac{1}{2}$, and $r=2$?

8

What is the value of $\frac{c-2(a+b)}{(c-a)^2}$ if $a=-\frac{1}{2}$, $b=\frac{3}{2}$, and $c=\frac{5}{2}$?

Topic: Simplifying Algebraic Expressions

1

Which of the following expressions is equivalent to $\frac{2}{3}(a^2-a-3)+\frac{1}{3}(a^2+2a+6)$?

A) a^2

B) a^2+a

C) a^2-a

D) a^2-1

2

Which of the following expressions is equivalent to $5.4(x-2y)-2.7(x-3y)$?

A) $2.7(x+y)$

B) $2.7(x-y)$

C) $2.7x+3.6y$

D) $2.7x-3.6y$

3

Which of the following expressions is equivalent to $\frac{1}{2}(2a+3b+4c)-\frac{3}{2}(b+2c)$?

A) $a-3c$

B) $a+5c$

C) $a+c$

D) $a-c$

4

Which of the following expressions is equivalent to $a(b-c)-b(a+c)-c(a-b)$?

A) bc

B) $2ac$

C) $-2bc$

D) $-2ac$

5

Which of the following expressions is NOT equivalent to $3[6a-3(1-a)-5(a+1)]$?

A) $12a-24$

B) $24(a-\frac{1}{2})$

C) $12(a-2)$

D) $24(\frac{1}{2}a-1)$

6

Which of the following expressions is NOT equivalent to $p-\frac{2}{3}(2p-3q)-\frac{1}{3}(p+4q)$?

A) $-\frac{2}{3}(p-q)$

B) $-\frac{2}{3}p+\frac{2}{3}q$

C) $-\frac{2}{3}(p+q)$

D) $-\frac{1}{3}(2p-2q)$

Topic: Rational/Irrational/Decimal

1

Which of the following shows the numbers arranged in increasing order?

A) $-\sqrt{3},\ -5,\ \frac{2}{3},\ 4,\ \sqrt{10}$

B) $-\sqrt{3},\ -5,\ \frac{2}{3},\ \sqrt{10},\ 4$

C) $-5,\ -\sqrt{3},\ \frac{2}{3},\ \sqrt{10},\ 4$

D) $\frac{2}{3},\ -\sqrt{3},\ \sqrt{10},\ 4,\ -5$

2

$11-2(2-0.8^2)+24\div(-4)=$

A) 1.68

B) 2.28

C) 2.78

D) 3.18

3

To the nearest cents, what is the value of $\$500(1+0.045)^8-\$500(1+0.04)^8$?

A) \$25.45

B) \$26.00

C) \$26.77

D) \$28.25

4

Which of the following is an irrational number?

A) -1.2

B) $\frac{4}{3}$

C) $-\sqrt{16}$

D) $-\sqrt{10}$

5

Which of the following is a rational number?

A) $\sqrt{1.6}$

B) $\sqrt{\frac{49}{64}}$

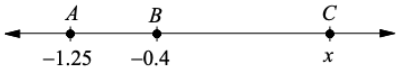
C) $\sqrt{0.9}$

D) $-\sqrt{250}$

6

In three plays, a football team loses 5 yards and then gains 32 yards by completing a pass. Then a penalty was called and the team lost 10 yards. How many yards did the team actually gain?

7



On the number line above, if $BC = 2AB$ what is the value of x?

Unit 1 Review Questions

1

Two less than the quotient of three and a number n

Which of the following is an expression for the statement above?

A) $2-\frac{n}{3}$

B) $\frac{n}{3}-2$

C) $\frac{3}{n}-2$

D) $2-\frac{3}{n}$

2

How much greater than $n-11$ is $n+3$?

A) 8

B) 10

C) 12

D) 14

3

Johnny received m text messages on Friday, three less than twice as many text messages on Saturday than on Friday, and five more text messages on Sunday than on Saturday. What is the total number of text messages he received over the three days?

A) $4m+2$

B) $5m-1$

C) $4m-2$

D) $5m+1$

4

What number is halfway between $-\frac{5}{6}$ and $\frac{1}{3}$ on a number line?

A) $-\frac{1}{4}$

B) $-\frac{1}{3}$

C) $-\frac{1}{2}$

D) $-\frac{5}{12}$

5

What is 4.4985 rounded to the nearest hundredth?

A) 4.49

B) 4.498

C) 4.499

D) 4.50

6

Which of the following expressions is equivalent to $3a+\frac{1}{2}(b-2c)-\frac{1}{2}(2a+3b)$?

A) $\frac{3}{2}a-\frac{1}{2}b-c$

B) $\frac{3}{2}a+b-c$

C) $2a-b-c$

D) $2a+b-c$

7

How many minutes are there in $2h$ hours and $6m$ minutes?

A) $60h+12m$

B) $120h+6m$

C) $60h+6m$

D) $120h+60m$

8

1. Add 5 to a number n.
2. Divide by 8.
3. Subtract by 1.
4. Multiply by 8.

When the sequence of operations above has been completed in order, which of the following is an expression for the statement above?

A) $n-1$

B) $n-2$

C) $n-3$

D) $n-4$

9

Which of the following expressions is equivalent to $(2y-x)-2(y-2z)-4(x+z)$?

A) $-3x$

B) $-5x$

C) $-3x+8z$

D) $-5x-8z$

10

If $x=10$, what is the value of $\frac{x}{2}+\frac{x}{20}+\frac{x}{200}$?

11

If x and y are positive integers and $2x+5y=18$, what is the value of x?

12

If $a=3$, $b=-1$, and $c=-2$, what is the value of $7-\frac{a-12\div(2-b)}{c+3}$?

Unit 2 - Solving Linear Equations

Topic: Learning how to write equations

1

Eighteen more than the number n is 125. What is the value of n?

2

Twenty is 7 less than twice the number w. What is the value of w?

3

Nine less than twice x is three more than x. What is the value of x?

4

Eight less than four times the number c is twenty. What is the value of c?

5

The sum of four consecutive odd integers is 296. What is the greatest of the four consecutive odd integers?

6

The sum of three fourths of the number a and 24 is negative 9. What is the value of a?

A) -44

B) -20

C) 20

D) 44

7

A number g is decreased by 23 and then multiplied by $\frac{1}{2}$. The result is 8 more than twice the number g.

A) -13

B) $-\frac{34}{3}$

C) $-\frac{29}{3}$

D) -8

8

The quotient of p and q is twelve less than three times the sum of p and q.

Which of the following equations represents the statement above?

A) $\frac{p}{q} = (3p+q) - 12$

B) $\frac{p}{q} = 12 - (3p+q)$

C) $\frac{p}{q} = 3(p+q) - 12$

D) $\frac{p}{q} = 12 - 3(p+q)$

Topic: Solving Equations

1

$$-11+x=9$$

Given the above equation, what is the value of $20-(11-x)$?

2

If $33-a=a+27-5a$, what is the value of $33+3a$?

3

If $\frac{1}{2}x+3=\frac{3}{4}-x$, what is the value of x?

4

If $x-(3-2x)+(4-5x)=-7$, what is the value of x?

5

If three quarters of a number decreased by twenty is equal to eighty two, what is that number?

6

Two and three fifths of a number equals -26. What is the number?

A) -15

B) -10

C) -5

D) 10

7

There are one hundred forty-two students in a high school band. These students represent two ninth of the total students in the high school. How many students attend the school?

A) 587

B) 613

C) 639

D) 665

8

$$820c+380r=4{,}360$$

The above equation models the amount of calories in a snack of c cups of cashews and r cups of raisins. The amount of calories per cup of cashews is 820 and the amount of calories per cup of raisins is 380. According to the equation, how many cups of raisins are used, if 3 cups of cashews are used to make the snack?

A) 3

B) 4

C) 5

D) 6

Topic: Solving Equations with Variables on both sides

1

If $7n+3=2n-12$, what is the value of $-n+3$?

2

If $7(h-5)-3h=\frac{3}{2}h$, what is the value of $\frac{1}{7}h$?

3

$$\frac{r}{3}+\frac{s}{11}=\frac{39}{33}$$

Given the above equation, if $s=2$, what is the value of r?

4

If $\frac{9-2k}{3}=k-2$, what is the value of k?

5

A \$48 shirts costs \$22 more than one half the cost of a pair of pants. How much does the pair of pants cost?

6

Twice a number n, increased by 11 is the same as six times the number decreased by 9. What is the value of n?

7

One half of a number increased by 3 is five less than two thirds of the number.

8

Four times the greatest of three consecutive odd integers exceeds three times the least by 31. What is the greatest of the three consecutive odd integers?

Topic: Equation with no solution/identity

1

If $\frac{1}{3}(9-6x)=5-2x$, what is the value of x?

A) 3

B) 4

C) 5

D) The equation has no solution.

2

If $5(x-2)-3x=2(x-5)$, which of the following must be true?

A) x is 3.

B) x is 4.

C) x is 5.

D) The equation is true for all values of x.

3

$$\frac{1}{3}(15-6x)=5-ax$$

If the linear equation above is an identity, what is the value of a?

A) 2

B) 3

C) 4

D) 5

4

$$4x+13=7(x-2)+bx$$

If the linear equation above has no solution, which of the following could be the value of b?

A) -1

B) -2

C) -3

D) -4

5

What is the value of n if $-\frac{7}{2}(2n-3)+4n=\frac{3}{2}(5+2n)$?

6

What is the value of k if $\frac{13-7(k+1)}{3}=3k-2$?

7

What is the value of x if $-2[3-(x-4)]+5x=2-x$?

8

What is the value of m if $0.4(5m-9)=-5m-4(0.3-m)$?

Topic: Solving for a specific variable

1

If $2x+3y=18$, which of the following gives y in terms of x?

A) $y=6+\frac{2}{3}x$

B) $y=6-\frac{2}{3}x$

C) $y=6+\frac{3}{2}x$

D) $y=6-\frac{3}{2}x$

2

If $P=2l+2w$, which of the following gives w in terms of P and l?

A) $w=P-2l$

B) $w=P-l$

C) $w=\frac{P}{2}-l$

D) $w=P-\frac{l}{2}$

3

If $c=\frac{a}{a+b}$, which of the following gives a in terms of b and c?

A) $a=\frac{bc}{1-c}$

B) $a=\frac{bc}{1+c}$

C) $a=\frac{bc}{b-c}$

D) $a=\frac{bc}{b+c}$

4

If $\frac{ab-1}{3}=c$, which of the following gives b in terms of the other variables?

A) $b=\frac{3c+1}{a}$

B) $b=\frac{3c-1}{a}$

C) $b=\frac{3c}{a}+1$

D) $b=\frac{3c}{a}-1$

5

If $gh-f=g-h$, which of the following gives g in terms of the other variables?

A) $g=\frac{f+h}{h-1}$

B) $g=\frac{f-h}{h+1}$

C) $g=\frac{f+h}{h+1}$

D) $g=\frac{f-h}{h-1}$

6

If $n=a+(k-1)d$, which of the following gives k in terms of the other variables?

A) $k=\frac{n-a+1}{d}$

B) $k=\frac{n+a-1}{d}$

C) $k=\frac{n-a-d}{d}$

D) $k=\frac{n-a+d}{d}$

Unit 2 Review Questions

1

If $\frac{5}{6}x = \frac{4}{5}$, what is the value of x?

A) $\frac{3}{2}$

B) $\frac{2}{3}$

C) $\frac{24}{25}$

D) $\frac{25}{24}$

2

When one half of the number n is decreased by 4, the result is -6. What is three times n added to 7?

A) -7

B) -5

C) -3

D) -1

3

If $4-7x$ is 5 less than 23, what is the value of $3x$?

A) -12

B) -9

C) -6

D) -3

4

$$P = F(\frac{1}{2}v^2 + 1)$$

The above equation gives pressure P, which is exerted by a fluid that is forced to stop moving. The pressure depends on the initial force, F, and the speed of the fluid, v. Which of the following expresses the square of the velocity in terms of the pressure and the force?

A) $v^2 = 2(P-F)-1$

B) $v^2 = 2(P-F-1)$

C) $v^2 = 2(\frac{P}{F})-1$

D) $v^2 = 2(\frac{P-F}{F})$

5

One half of the number n increased by 10 is the same as four less than twice the number.

Which of the following equations represents the statement above?

A) $\frac{1}{2}(n+10) = 2(n-4)$

B) $\frac{1}{2}n+10 = 2(n-4)$

C) $\frac{1}{2}n+10 = 2n-4$

D) $\frac{1}{2}(n+10) = 2n-4$

6

If a is b less than one-half of c, what is b in terms of a and c?

A) $\frac{1}{2}c - a$

B) $a - \frac{1}{2}c$

C) $2a - c$

D) $c - 2a$

7

If $x = 1 - y$ and $3x = 8 - 5y$, what is the value of x?

A) -2

B) $-\frac{3}{2}$

C) $-\frac{1}{2}$

D) $\frac{5}{2}$

8

The quotient of a number and five equals nine less than one half of the number. What is the number?

A) -20

B) -10

C) 20

D) 30

9

If $\frac{a}{b} = 1$, what is the value of $a - b$?

10

When an object is thrown from the ground into the air with an initial upward speed of v_0 meters per second, the speed v, in meters per second, is given by the equation $v = v_0 - 9.8t$, where t is the time in seconds. The speed of an object becomes 0 when the object reaches its maximum height. If an object is thrown upward with an initial speed of 14 m/sec, how many seconds does it taken an to reach its maximum height? (Round your answer to the nearest hundredth of a second.)

11

When an object is dropped from a height of s feet above the ground, the height h of the object is given by the equation $h = -16t^2 + s$, where t is the time in seconds after the object has dropped. If an object is dropped from a height of 144 feet above the ground, how many seconds will it take to hit the ground?