# ASVAB-SECTION-6 ${ }^{\text {Q\&As }}$ 

ASVAB Section Six : Mathematics Knowledge

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## QUESTION 1

The average of $80,46,32$, and 22 is $\qquad$ .
A. 48
B. 42
C. 36
D. 45

Correct Answer: D

## QUESTION 2

Which of the following means $3 n+7=16$ ?
A. 7 more than 3 times a number is 16
B. 3 more than 7 times a number is 16
C. 7 less than 3 times a number is 16
D. 10 times a number is 16

Correct Answer: A
Explanation:
The expression $3 n$ means 3 times $n$. The addition sign before the 7 indicates the phrase more than.

## QUESTION 3

Which is equivalent to $43 / 8$ ?
A. $12 / 8$
B. $3 / 32$
C. $3 / 20$
D. $35 / 8$

Correct Answer: D
Explanation:
Multiply $8 \times 4$ to get $32 / 8+3 / 8=35 / 8$

## QUESTION 4

If $\mathrm{a}=4$, then $\mathrm{a} 3 \div \mathrm{a}=$
A. 4
B. 12
C. 64
D. 16

Correct Answer: D
Explanation:
$(4 \times 4 \times 4) \div 4=64 \div 4=16$

## QUESTION 5

A cylindrical post has a cross section that is a circle with a radius of 3 inches. A piece of cord can be wound around it exactly seven times.

How long is the piece of cord? Use $22 / 7$ as the value of?.
A. 66 inches
B. 42 inches
C. 198 inches
D. 132 inches

Correct Answer: D
Explanation: A length of cord that will wind around once is equal to the circumference of the circle whose radius is 3 inches. The circumference of a circle equals $2 \% r$ where $n=22: 7$ and $r$ is the radius. Circumference $=22 / 1 \times 22 / 7 \times 3 / 1$ $=132 / 7$ inches If the cord can be wound around the post seven times, its length is seven times the length of one circumference. Length of cord $132 / 7 \times 7 / 1=132$ inches

## QUESTION 6

An equilateral triangle has the same perimeter as a square whose side is 12 inches.
What is the length of a side of the triangle?
A. 9 inches
B. 12 inches
C. 18 inches
D. 16 inches

## Correct Answer: D

Explanation:
The perimeter of a square is 4 times a side. Therefore, the perimeter of this square is $4 \times 12$ inches or 48 inches.

The equilateral triangle has the same perimeter as the square. Since the 3 sides of an equilateral triangle are equal, divide by 3 to find the length of one side. ( 48 inches) $\div 3=16$ inches (length of one side).

## QUESTION 7

$(675 \times 3) / 5=$ $\qquad$ .
A. 400
B. 40
C. 200
D. 405

Correct Answer: D

## QUESTION 8

Solve for x :
$x 2=3 x+10$.
A. $x=3 ; x=10$
B. $x=-3 ; x=-10$
C. $x=-2 ; x=5$
D. $x=2 ; x=-5$

Correct Answer: C
Explanation:
To solve the equation $x 2=3 x+10$, turn it into an equation equal to 0 , find the two factors of the new equation, and then set each factor equal to 0 , to solve for $x$.

Step 1: Move all expressions to one side of the equal sign. Change the signs of terms that are moved. $x 2-3 x-10=0$

Step 2: Find the two factors that you would multiply to produce this polynomial. Do this one expression at a time. What gives you x2? The answer is $x$ times $x$. Therefore, place an $x$ at the beginning of each factor. ( $x$ )( x ) Next find the two numbers you would multiply to get 10. The numbers could be 10 and 1 , or 5 and 2 , but remember that the two numbers also have to produce 3, the middle term in the polynomial. The difference between 5 and 2 is 3 . Therefore 5 and 2 are the numbers that complete the factors $(x-5)(x+2)$ Now decide the signs that belong in each factor. The appearance of -10 in the polynomial means that 5 and 2 have different signs. The $-3 x$ in the polynomial indicates that 5 (the larger number) has the minus sign, and that 2 has a plus sign. Thus $(x-5)(x+2)$ Step 3: Set each factor equal to zero and solve the equations. $x-5=0 x+2=0 x=5 x=-2$

## QUESTION 9

How many different combinations of shirts and ties are possible if you have 4 shirts and 5 ties?
A. 120
B. 9
C. 30
D. 20

Correct Answer: D
Explanation:
With each of the 4 shirts you can wear one of the 5 ties, so the total number of combinations is $4 \times 5=20$

## QUESTION 10

If $y$ inches of rain falls in one minute, how many inches will fall in $p$ hours?
A. $60 \mathrm{y} / \mathrm{p}$
B. $60 y$
C. 60py
D. 60 p

Correct Answer: C

## QUESTION 11

What $\$ 's the sum of the integers from 1 to 300 ?
A. 38,243
B. 45,150
C. 49,923
D. 52,024

Correct Answer: B
Explanation:
The formula to find the sum of a finite arithmetic sequence is $S=n / 2(a+b)$, where $n$ is the number of terms, $a$ is the first term in the sequence, $a n d b$ is the last term in the sequence.

In this case there are 300 terms ( n ), and the first term is 1 and the final term is 300 .
$S=n / 2(a+b)$
$S=300 / 2(1+300)$
$S=150(301)$
$S=45,150$

## QUESTION 12

Solve the following problem: What does 96/92 =
A. 94
B. 93
C. 184
D. 95

Correct Answer: A

Explanation:
When dividing two powers with the same base, you keep the base and subtract the exponents.

## QUESTION 13

The cube of 5 is $\qquad$ .
A. 125
B. 25
C. 15
D. 50

Correct Answer: A
Explanation:
The cube of $5=5 \times 5 \times 5=125$.

## QUESTION 14

A stack of sports cards contains 3 baseball cards, 3 football cards and 6 hockey cards.
If one card is picked at random, what is the probability that it is a hockey card?
A. $1 / 3$
B. $1 / 6$
C. $1 / 4$
D. $1 / 2$

Correct Answer: D
Explanation:
There are 12 cards in total. Therefore, the probability of picking a hockey card is $6 / 12$ or $1 / 2$.

## QUESTION 15

A pizza maker has y pounds of flour to make pizzas. After he has used 60 pounds of flour, how much flour is left? The expression that correctly represents the quantity of flour left is $\qquad$ .
A. $60-\mathrm{y}$
B. $y / 60$
C. $60+y$
D. $y-60$

Correct Answer: D
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