JD's REGENTS PREPARATION, LLC.

-Presents-

ACT PREP

REVIEW MANUAL

WITH

300 TOTAL REVIEW QUESTIONS

180 TOPICALLY ORGANIZED QUESTIONS
AND
120 QUESTIONS CONTAINED IN
TWO PRACTICE EXAMS

Copyright © 2021 by JD's Regents Preparation, LLC.
Published by: JD's Regents Preparation, LLC.

All rights reserved. No part of this book may be reproduced in any form or incorporated into any information retrieval system, without the permission of the copyright owner.
To report piracy and unauthorized reproduction please call 1-866-898-PREP (7737)

The scanning, uploading, and distribution of this book via the Internet or via any other means without the permission of the publisher is illegal and punishable by law. Please purchase only authorized electronic editions and do not participate in or encourage electronic piracy of copyrightable materials. Your support of the author's rights is appreciated.

Cover illustration by James A. Stiehl

Printed in the United States of America
ISBN: 978-1-939246-70-7

Table of Contents

ALGEBRA

Pre-Algebra 1
25 Questions

Algebra 1 10
18 Questions

Algebra 2 17
14 Questions

Algebra 3 24
14 Questions

Algebra 4 30
7 Questions

GEOMETRY

Geometry 1 33
22 Questions

Geometry 2 45
11 Questions

Geometry 3 50
23 Questions

Geometry 4 ……60
15 Questions

FUNCTIONS
Function 1 ……67
6 Questions

Function 2 ……70
9 Questions

PROBABILITY ……76
7 Questions

STATISTICS ……80
10 Questions

ACT PRACTICE EXAM 1 ..……84
60 Questions

ACT PRACTICE EXAM 2 ..……112
60 Questions

SOLUTIONS ……..……141

PREALGEBRA

1. 12% of 90 is $\frac{1}{5}$ of what number?

PA 04

a. 2.16
b. 27
c. 54
d. 540
e. 5,400

2. If 60% of a given number is 15, then what is 35% of the given number?

PA 01

a. 5.25
b. 7.25
c. 8.75
d. 9
e. 21

3. Kyle's current hourly wage for working at Many Miles Garage is $14.00. Kyle was told that at the beginning of next month, his new hourly wage will be an increase of 8% of his current hourly wage. What will be Kyle's new hourly wage?

PA 03

a. $14.08
b. $14.80
c. $15.12
d. $22.00
e. $24.20

4. To get a scuba diving license, an applicant must pass a written test and an under-water diving test. Past records show that 70% of the applicants pass the written test and 90% of those who pass the written test pass the under-water diving test. Based on these figures, how many applicants in a random group of 200 applicants would you expect to get their scuba diving license?

PA 24

a. 20
b. 108
c. 126
d. 140
e. 180

5. The product of 4 and 200% of 2 has the same value as which of the following calculations?

PA 02

a. 100% of 8
b. 150% of 8
c. 300% of 8
d. 300% of 4
e. 400% of 4

6. $|9(-4) + 5(2)|$ = ?

PA 05

a. -46
b. -26
c. 26
d. 29
e. 46

7. $-5\,|-3+9|$ = ?

PA 09

a. -60
b. -30
c. 1
d. 30
e. 60

8. $|8-5|-|5-8|$ = ?

PA 07

a. -6
b. -4
c. -2
d. 0
e. 6

9. In which of the following are $\frac{2}{3}, \frac{3}{5}, and\ \frac{5}{9}$ arranged in ascending order?

PA 06

a. $\frac{5}{9} < \frac{3}{5} < \frac{2}{3}$
b. $\frac{5}{9} < \frac{2}{3} < \frac{3}{5}$
c. $\frac{2}{3} < \frac{3}{5} < \frac{5}{9}$
d. $\frac{3}{5} < \frac{2}{3} < \frac{5}{9}$
e. $\frac{2}{3} < \frac{5}{9} < \frac{3}{5}$

10. What is the least common multiple of 40, 70, and 90 ?

PA 08

a. 70
b. 200
c. 252
d. 2,520
e. 25,200

11. What fraction lies exactly halfway between $\frac{3}{4}$ *and* $\frac{4}{5}$?

PA 010

a. $\frac{2}{3}$
b. $\frac{6}{7}$
c. $\frac{3}{20}$
d. $\frac{17}{25}$
e. $\frac{31}{40}$

12. Tony's favorite quiche recipe requires 5 eggs and makes 8 servings. Tony will modify the recipe by using 10 eggs and increasing all other ingredients in the recipe proportionally. What is the total number of servings the modified recipe will make?

PA 011

a. 8
b. 10
c. 12
d. 16
e. 18

13. In teaching a lesson on the concept of fourths, Ms. Chow uses a divide-and-set-aside procedure. She starts with a certain number of poker chips, divides them into 4 equal groups, and sets 1 group aside to illustrate $\frac{1}{4}$. She repeats the procedure by taking the chips she had NOT set aside, dividing them into 4 equal groups, and setting 1 of these groups aside. If Ms. Chow wants to be able to complete the divide-and-set-aside procedure at least 3 times (without breaking and of the chips into pieces), which of the following is the minimum number of poker chips she can start with?

PA 23

a. 16
b. 24
c. 48
d. 64
e. 256

14. Anna walked at a rate of 5 miles per hour for 15 minutes and then walked at a rate of 3 miles per hour for 5 minutes. Which of the following gives the average rate, in miles per hour, at which she walked over this 20-minute period?

PA 012

a. $\frac{3}{4}$
b. $\frac{4}{3}$
c. $\frac{7}{2}$
d. 4
e. $\frac{9}{2}$

15. What is the sum of the first 5 terms of the arithmetic sequence in which the 6^{th} term is 10 and the 10^{th} term is 16?

PA 13

a. 16.5
b. 19
c. 24
d. 27.5
e. 37.5

16. Which of the following expressions is equivalent to $(x+4)^{-10}$?

PA 14

a. $-x^{10}-4^{10}$

b. $-10x-40$

c. $\frac{1}{x^{10}}+\frac{1}{4^{10}}$

d. $\frac{1}{(4x)^{10}}$

e. $\frac{1}{(x+4)^{10}}$

17. Which of the following matrices is equal to $\begin{bmatrix} 7 & 6 \\ -3 & 9 \end{bmatrix}+\begin{bmatrix} -8 & 8 \\ 4 & 6 \end{bmatrix}$?

PA 17

a. $\begin{bmatrix} -1 & 14 \\ 1 & 15 \end{bmatrix}$

b. $\begin{bmatrix} -1 & 14 \\ 7 & 15 \end{bmatrix}$

c. $\begin{bmatrix} 15 & 14 \\ 7 & 15 \end{bmatrix}$

d. $\begin{bmatrix} 13 & 0 \\ 6 & 10 \end{bmatrix}$

e. $\begin{bmatrix} -13 & 68 \\ 47 & 6 \end{bmatrix}$