# Educational Seminars Institute E S I Educational Seminars Institute 

## ARITHMETIC REASONING TIME: 36 Minutes - 30 Questions

This test consists of 30 questions about arithmetic. Each question is followed by 4 possible answers. Decide which answer is correct then circle the number and letter as your choice. Use scratch paper for any figuring you wish to do.

Your score on this test will be based on the number of questions you answer correctly. You should try to answer every question. Do not spend too much time on any one question. Good Luck.

1. Of the 123 points scored by the lakers basketball team, 28 points were scored in the 1st quarter, 36 points in the 2nd quarter, 45 points in the 3rd quarter, and the rest in the 4 th quarter. How many points were scored in the last quarter?

1 -A 36
1-A 62
1-C 26
1-D 14
2. Mr Graham, the druggist, measured out 1362 grams of vitamin C during the day. If 454 grams equal 1 pound, how many pounds of vitamin C did he measure out that day?

2-A 1
2-B 3
2-C 2
2-D 4
3. From a 20 -foot board, Ernie cut 3 sections measuring $41 / 2$ feet, $31 / 2$ feet, and $21 / 2$ feet each. How many feet of the original board remained?

3-A 101/2
3-B 10
3-C $91 / 2$
3-D 8
4. At the cosmetologist, Lisa spent $\$ 5.00$ for a manicure, $\$ 4.00$ for a shampoo and $\$ 18.50$ for a hair styling. How much change should Lisa get if she hands the cashier $\$ 40.00$ ?

4-A \$ 12.50
4-B \$ 13.50
4-C \$ 22.50
4-D \$ 27.50
5. If you know the cost of one ice cream cone and wish to buy 8 cones, how do you find the total cost?

5-A cost of 1 cone $\div 8$
5-B cost of 1 cone x 8
5-C cost of 1 cone +8
5-D cost of 1 cone - 8
6. How long a piece of wood is required to make 3 steps, each measuring 1 foot 8 inches?

6-A 3 feet
6-B 3 feet 8 inches
6-C 4 feet
6-D 5 feet
7. Harry discovered that his test scores represent 15 points for each half hour he spends studying up to 3 hours. At that rate, if Harry spends 3 hours studying for the next math test, what grade should he expect to receive?

7-A 90
7-B 45
7-C 50
7-D 30

## Questions 8 and 9 refer to the following graph



On the circle graph, the distribution of available income in the United States for a particular year is represented. The population has been divided into 5 equal parts, starting from the poorest fifth and ending with the richest.
8. What is the difference between the income available to the poorest $3 / 5$ of the population and that available to the richest $1 / 5$ ?

8-A 11\%
8-B 6\%
8-C 18\%
8-D 12.9\%
9. Which of the following ratios best illustrates the relationship in income distribution between the poorer $4 / 5$ of the population and the richest $1 / 5$ ?

9-A 41:59
9-B 76:24
9-C 6:4
9-D 59:41
10. If 50 gallons of water fall over the waterfall in 1 minute, how many gallons fall over in 1 day?

10-A 72,000
10-B 36,000
10-C 5000
10-D 3600
11. The Eastlands spent $\$ 535$ for roundtrip tickets from Nashville to New Orleans, \$325 for three nights in a hotel, $\$ 275$ for food and entertainment and $\$ 175$ for a rental car. What was the total cost of their trip?

11-A \$1310
11-B \$1200
11-C \$1420
11-D \$1350
12. The heights of the 4 new members of the basketball team are as follows:

$$
\begin{array}{ll}
\text { Tom } & 6 \mathrm{ft} 2 \mathrm{in} \\
\text { Duncan } & 6 \mathrm{ft} 4 \text { in } \\
\text { Troy } & 6 \mathrm{ft} 4 \text { in } \\
\text { Vinnie } & 6 \mathrm{ft} 10 \text { in }
\end{array}
$$

What is the average height of the 4 players?
$12-\mathrm{A} 6 \mathrm{ft}$
12-B 6 ft 3 in
12-C 6 ft 5 in
12-D 6 ft 8 in

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13. Maria had one coupon good for 75 cents off a half gallon of orange juice. If she bought 2 half gallons of orange juice at $\$ 1.95$ each, how much did she have to pay?

13-A $\$ 4.65$
13-B \$3.90
13-C \$3.15
13-D $\$ 4.00$
14. Jack can lift 110 pounds. If his barbell weighs 20 pounds, how many pounds are in each of the two equal weights added to the barbell to make it weigh 110 pounds?
$14-\mathrm{A} 90$
14-B 45
14-C 95
14-D 40
15. Tires regularly priced at $\$ 44$ each are on sale for $\$ 37$. How much would a car owner save by buying four tires at the sale price?

$$
\begin{array}{ll}
15-\mathrm{A} & \$ 7 \\
15-\mathrm{B} & \$ 28 \\
15-\mathrm{C} & \$ 49 \\
15-\mathrm{D} & \$ 81
\end{array}
$$

16. To check the quality of a shipment of 500 articles, a sampling of 50 articles was carefully inspected. Of this sample, 4 were found to be defective. On this basis, what is the probable percentage of defective articles in the original shipment?

16-A . $04 \%$
16-B $4 \%$
16-C $8 \%$
16-D 40\%
17. If one quart of floor wax covers 400 square feet, how many gallons of wax are needed to wax the floor of an office 6400 square feet?

17-A 4
17-B 8
17-C 12
17-D 16
18. The 1988 National League Pennant winner won 94 games that year and lost 67 . What percentage of games did the team win?

18 -A 50
18-B 96
18-C 58
18-D 42
19. How many seasons did Cy Young pitch if he played baseball from 1890 to 1911 ?

19-A 21
19-B 22
19-C 10
19-D 11
20. During a competition, a javelin was thrown 280 feet, 260 feet and 282 feet on three successive throws. What was the average distance for the three javelin throws?

20-A 822 feet
20-B 540 feet
20-C 400 feet
20-D 274 feet
21. For his birthday, Frank received a $\$ 15$ gift certificate to Ramble's Department Store. If he used the certificate to purchase a shirt for $\$ 18.75$, how much money did he have to add?

21-A $\$ 3.75$
21-B $\$ 4.25$
21-C \$5.75
21-D \$33.75
22. A $\$ 150$ fund is available for a holiday party. If $60 \%$ of the available money is spent for food and drinks, how much is left for other items?

22-A $\$ 60$
22-B \$70
22-C $\$ 80$
22-D \$90

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23. A book of 20 tickets for the bus costs $\$ 15.00$. Individually purchased tickets cost $\$ 1.25$ each. John made 25 trips on the bus. What is the minimum amount he must pay?

23-A $\$ 6.25$
23-B $\$ 20.00$
23-C $\$ 21.25$
23-D \$25.00
24. A 500-foot ribbon was tied around the school for the homecoming game. If 750 students attend the game and each receives an equal share of ribbon as a souvenir, how many inches of ribbon will each student get?

24-A 5
24-B 8
24-C $2 / 3$
24-D 4
25. A $1 / 2$ gram specimen of topical soil was divided into samples for each of 50 biology students to examine under microscopes. If equal portions were prepared for each student, how many grams of soil should each student receive?

25-A . 5
25-B 1.0
25-C . 1
25-D . 01
26. The value of 32 nickels, 73 quarters and 156 dimes is

26-A \$26.10
26-B \$31.75
26-C \$35.45
26-D \$49.85
27. The wage rate in a certain trade is $\$ 8.60$ an hour for a 40 hour week and $11 / 2$ times the base pay for overtime. An employee who works 48 hours in a week earns

27-A $\$ 447.20$
27-B $\$ 498.20$
27-C $\$ 582.20$
27-D \$619.20
28. The population of Stormville has increased from 80,000 to 100,000 in the last twenty years. What is the percent of increase in the population?

28-A 20
28-B 25
28-C 60
28-D 80
29. Fifty men and 40 women started the 10 mile hike. Five men and four women dropped out. What percentage of people dropped out of the hike?

29-A 10
29-B 9
29-C 2
29-D 90
30. The 100 meter freestyle swimming competition was won by Roosevelt High School in 50 seconds. How many meters per second did the Roosevelt High swimmer swim?
$30-\mathrm{A} \quad 1 / 2$
30-B 1 1/2
30-C 4
30-D 2

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1. D
2. C
3. $B$
4. $\mathbf{A}$
5. $\mathbf{C}$
6. C
7. $\mathbf{A}$
8. B
9. $B$
10. D
11. D
12. $\mathbf{A}$
13. $\mathbf{A}$
14. $\mathbf{A}$
15. B
16. C
17. D
18. B
19. A
20. D
21. $\mathbf{A}$
22. C
23. C
24. $\mathbf{A}$
25. C
26. B
27. B
28. $\mathbf{A}$
29. B
30. D
