

SCRANTON PREPARATORY SCHOOL
ENTRANCE EXAMINATION
ARITHMETIC

Time: 60 Minutes

December 3, 2005

DIRECTIONS: Do all problems in order in the blue examination book. Please be neat. Do not do more than four problems on each page of the blue examination book. Do not change fractions to decimals or decimals to fractions in problems one to fourteen inclusive. Calculators may not be used. Place your final answer in its simplest form in the proper blank on the answer sheet. Since you will be given credit for answers only, you should be very careful when placing your final answer on the answer sheet. In the word problems, make sure you answer the question that is asked.

1. Add: $13\frac{4}{7} + \frac{3}{5} + 4 + 5\frac{1}{2}$

2. Add: $0.16 + 372 + 7.4 + 124.029 + 21.42$

3. Subtract 57.579 from 234.385

4. Subtract .58 from 58

5. Subtract $12\frac{5}{12}$ from $23\frac{2}{9}$

6. Subtract $7\frac{4}{5}$ from 11

7. Multiply 16.57 by 30.4

8. Multiply .00047 by 3.56

9. Multiply $3\frac{3}{10}$ by $\frac{5}{6}$

10. Multiply $1\frac{2}{9}$ by $8\frac{3}{4}$

11. Divide 1.5322 by 23.5

12. Divide 2406 by .24

13. Divide $8\frac{3}{4}$ by $3\frac{7}{8}$

14. Divide 21 by $8\frac{2}{5}$

15. Find 70 percent of 245.

16. 72 is what percent of 1800?

17. 93 is 60 percent of what number?

18. If $a \Leftrightarrow b$ is defined as $\frac{ab+b^2}{b-\frac{1}{2}a}$, evaluate $6 \Leftrightarrow 4$

19. If there are 12 yips in 1 zip and 14 pips in 1 yip, how many pips are there in 6 zips?

20. When the sum of a number and 8 is divided by the difference of 54 and 34, and that quotient is multiplied by 12, the result is 84. What is the number?
21. Last year a part-time employee received 30 paychecks. Each of his first 6 paychecks was \$1250. Each of his remaining paychecks was \$50 more than each of his first 6 paychecks. What was the average amount of his paychecks for the year?
22. A mixture of nuts is to contain 4 parts cashews to 6 parts almonds to 7 parts peanuts by weight. How many pounds of almonds will be needed to make 340 pounds of the mixture?
23. Tank A is $\frac{1}{3}$ full of oil and Tank B, which holds twice the amount of oil as Tank A, is $\frac{2}{3}$ full of oil. If all of the oil in Tank A is poured into Tank B, then Tank B will be filled to what fraction of its total capacity?
24. Of 100 pet owners who responded to a survey, 50 own cats, 42 own dogs, and 7 own both. How many respondents own neither a cat nor a dog?
25. An employee of the Dougherty Company works 60 hours per week and earns \$12 per hour. After his hourly wage was increased by 25%, he decided to reduce the number of hours he worked per week so that his total weekly income would remain unchanged. By what percent should the number of hours worked per week be reduced?

Arithmetic Answer Sheet

1. $\underline{23 \frac{47}{70} ; \frac{1657}{70}}$
2. $\underline{525.009}$
3. $\underline{176.806}$
4. $\underline{57.42}$
5. $\underline{10 \frac{29}{36} ; \frac{389}{36}}$
6. $\underline{3 \frac{1}{5} ; \frac{16}{5}}$
7. $\underline{503.728}$
8. $\underline{.0016732}$
9. $\underline{2 \frac{3}{4} ; \frac{11}{4}}$
10. $\underline{10 \frac{25}{36} ; \frac{385}{36}}$
11. $\underline{.0652}$
12. $\underline{10025}$
13. $\underline{\frac{70}{31} ; 2 \frac{8}{31}}$
14. $\underline{\frac{5}{2} ; 2 \frac{1}{2}}$
15. $\underline{171.5}$
16. $\underline{4 ; 4\% ; 4 \text{ percent}}$
17. $\underline{155}$
18. $\underline{40}$
19. $\underline{1008}$
20. $\underline{132}$
21. $\underline{\$1290}$
22. $\underline{120 ; 120 \text{ pounds}}$
23. $\underline{\frac{5}{6}}$
24. $\underline{15}$
25. $\underline{20 ; 20\% ; 20 \text{ percent}}$

EXAMINATION NUMBER _____

ARITHMETIC SCORE _____