

Fall 2006
Instr: Paul Terwilliger
Section 2

Math 130 Final Exam

Your Name _____

NO CALCULATORS ALLOWED. Show all your work.

1. Compute $2/7$ divided by $6/5$. Express the result as a fraction in lowest terms.

2. Explain why division by 0 is undefined. There are two cases to consider.

3. Identify the arithmetic property being used (commutative law etc).

a) $7 \times 5 = 5 \times 7$

b) $6 + 0 = 6$

c) $3 + (5 + 2) = (3 + 5) + 2$

d) $3 + 4 = 1 \cdot (3 + 4)$

e) $3(8 \times 6) = (3 \times 8)6$

f) $(7 \times 5) + (2 \times 5) = (7 + 2) \times 5$

4. Find the greatest common factor of 8049 and 2743.

5. Determine whether 2899 is prime.

6. Order the fractions $\frac{5}{9}$, $\frac{4}{7}$, $\frac{9}{16}$ in increasing order.

7. Simplify the expression $\frac{2^n(3x)^{2n} \cdot (3y)^{n+m} \cdot (x^2y)^{3m}}{(3xy^2)^m \cdot 18^n (x^n)^2 y^n}$ as much as possible.

8. Draw a rectangular array model for the problem $32 \div 6$.

9. Make up a word problem for $45 \div 9$, using the partative interpretation of division.

10. (Teacher's solution required) The number of men is $\frac{5}{8}$ of the number of women working in a factory. If there are 24 more women than men, how many workers are there altogether?

11. (Teacher's solution required) $\frac{4}{5}$ of Peter's money is twice as much as Weimin's money. What fraction of Peter's money is Weimin's money?

12. (Teacher's solution required) Two numbers are in the ratio of 3:5. After subtracting 11 from each, the new ratio is 2:7. What are the two numbers?

13. (Teacher's solution required) The ratio of Ian's money to Juan's money is 2:3. After spending one half of his money, Juan has \$60 less than Ian. How much money did Ian have?

14. (Teacher's solution required) John and Mathew had an equal amount of money each. After John spent \$25 and Mathew spent \$18, the ratio of John's money to Mathew's money was 2:3. How much money did each boy have at first?

15. (Teacher's solution required) Kristen spends 30% of her savings on a watch and 60% of the remainder on a dress. What percentage of her savings is left?

16. (Teacher's solution required) A factory has 600 workers. 250 of them are men and the rest are women. How many percent more women than men are there?

17. (Teacher's solution required) It takes one factory 6 minutes to fill 50 bottles, while it takes a slower factory 9 minutes to fill 50 bottles. If both factories are working at the same time, how long will it take to fill 1500 bottles?

18. (Teacher's solution required) A motorist took 4 hours to travel from town A to town B. His average speed for the whole trip was 60 km/h. For the first $\frac{4}{5}$ of the distance he traveled at an average speed of 64 km/h. Find his average speed for the remaining trip.

19. (Teacher's solution required) Brian drove from Town P to Town Q. He traveled the first 36 km at an average speed of 54 km/h. He traveled the remaining 96 km at an average speed of 72 km/h. Find his average speed for the whole trip.

20. (Teacher's solution required) A tank is $\frac{2}{7}$ filled with water. It can hold another 35 gal of water. After 21 gal of water is added to the tank, now what fraction of the tank is filled with water?