

Math 5b, homework 2.



1. The sum of two natural number is 54. First number gives a remainder of 11 when divided by 17, the second gives a remainder 9 when divided by 17. What are these numbers?
2. The sum of two numbers is 242, and when the larger of these numbers is divided by the smaller one, the quotient is 4, and the remainder is 22. Find the smaller of these numbers.
3. Write the following products as exponents:

Example:

$$-2 \cdot 2 \cdot 2 \cdot 2 = -2^4;$$

$$(-2) \cdot (-2) \cdot (-2) \cdot (-2) = (-2)^4$$

a. $-3 \cdot 3 \cdot 3 \cdot 3$;

b. $-5m \cdot m \cdot 2n \cdot n \cdot n$;

c. $(ab) \cdot (ab) \cdot (ab) \cdot (ab) \cdot (ab) \cdot (ab)$;

d. $-q \cdot q \cdot q \cdot q \cdot q$;

e. $4 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$;

f. $(p - q) \cdot (p - q) \cdot (p - q)$;

4. What digits should be put instead of * to get true equality? How many solutions does each problem have?

a. $(3 *)^2 = *** 6$

b. $(2 *)^2 = ** 9$

5. Represent a^{36} as an exponent with the base

a. a^2 ; b. a^3 ; c. a^4 ; d. a^6 ; e. a^9 ; f. a^{12} ; g. a^{18}

6. In the family, there are 4 people: mom, dad, son, and daughter. Together, they are 110 years old. The mother is 5 times older than the daughter and 6 years younger than the father, while the daughter is 2 times younger than the son. How old is each member of the family?

7. Evaluate (the answer is 0.8 (or 4/5):

$$\frac{1\frac{1}{2} \cdot 2\frac{2}{3} \cdot 0.36}{0.6 \cdot 2\frac{1}{4} \cdot 1\frac{1}{3}};$$

