

**2006 Pizitz Mathematics Tournament
Sixth Grade Ciphering**

- 1-1 Solve: $4x - 6 = 22$.
- 1-2 The diameter of the moon is 34,760 m. What is its radius in meters?
- 1-3 Simplify: $2^0 + 2^1 + 2^2 + 2^3 + 2^4$.
- 1-4 A $10\frac{1}{2}$ foot board was cut into 3 equal pieces. How many inches long was each piece?
- 1-5 A bag contains 32 marbles: 7 red, 9 blue, and the rest white. What is the probability of blindly drawing a white marble?
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- 2-1 A bottle held $2\frac{1}{3}$ cups of oil. Adam poured $\frac{3}{4}$ cup into a pan. How many cups were left in the bottle?
- 2-2 A right triangle has side lengths of 12, 15, and 9. What is its area?
- 2-3 Simplify: $\sqrt{9} + \sqrt{16} + \sqrt{9+16}$.
- 2-4 Find the sum of the median and range for the set {12, 4, 3, 7}.
- 2-5 If $2A + 3 = 15$, what is $3A - 2$?
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- 3-1 What is $37\frac{1}{2}\%$ of 48?
- 3-2 Jay had 3 nickels, 3 quarters, 4 dimes and 2 pennies in his pocket. He spent \$0.78. How much money did he have left?
- 3-3 Solve for n , given $n = \frac{2}{3} \times \frac{4}{5} \times \frac{6}{7} \times \dots \times \frac{10}{11}$.
- 3-4 In how many different ways can seven books be arranged along a shelf?
- 3-5 $(9)^{1/2}$ means $\sqrt{9}$. What is half of $(36)^{1/2}$?
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- 4-1 Simplify: $36 - 6(12 \div 3 + 1)$
- 4-2 A \$52 jacket is on sale at 25% off. What is the sale price?
- 4-3 Solve: $\frac{3}{8} + \frac{3}{4} + x = 2$
- 4-4 A square has a side length of 31 cm. How many square meters is its area?
- 4-5 What is the difference between the 10th prime number and 10th composite number?
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- Ex1 A fair octagonal die is rolled. What is the probability that a multiple of 3 shows?
- Ex2 What is the quotient of 42.63 and 0.7?
- Ex3 A square has the same side length as a regular heptagon. The perimeter of the heptagon is 42. What is the area of the square?