

2007 Pizitz Mathematics Tournament
Seventh Grade Ciphering

Answers	
1-1	112
1-2	23
1-3	165
1-4	610
1-5	1050
2-1	252
2-2	3, x=3 or {3}
2-3	6
2-4	100° or 100
2-5	¹⁹¹ / ₁₁₀
3-1	720
3-2	2
3-3	-7
3-4	50π
3-5	²⁵⁸ / ₃₅ or 7 ¹³ / ₃₅
4-1	5 or 5 ft.
4-2	¹ / ₆
4-3	16
4-4	188
4-5	3, x=3 or {3}
Ex1	75, y=75 or {75}
Ex2	¹ / ₅₁
Ex3	540° or 540

- 1-1 Find 35% of $66\frac{2}{3}\%$ of 480.
- 1-2 Evaluate $2 + 3(4) + 12 - 9 \div 3$
- 1-3 If the ratio of boys to girls in a movie theater is 3:7, calculate the number of boys if there are 550 people in the theater.
- 1-4 Evaluate $\sqrt{2}(\sqrt{50} + 300\sqrt{2})$
- 1-5 Find the sum of the following arithmetic sequence: 5, 10, 15, 20, ..., 100.
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- 2-1 Evaluate: $\frac{10!3!}{6!5!}$.
- 2-2 Solve for x : $-2x + 3(2x + 1) = 8x - 9$.
- 2-3 Find the sum of the exponents in the prime factorization of 240.
- 2-4 Two supplementary angles have measures of $4x^\circ$ and $(2x + 30)^\circ$. Find the measure of the larger angle.
- 2-5 Change $1.\overline{736}$ into an improper fraction in lowest terms.
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- 3-1 How many 6-digit numbers can be formed from the digits 1,2,6,7,8, and 9 if each digit is used only once?
- 3-2 Evaluate $\frac{8^9}{2^{26}}$.
- 3-3 Find $A + C - B$ if $A =$ a one-digit perfect number
 $B =$ the number of prime numbers less than 50
 $C =$ the smallest prime number
- 3-4 Find the volume of a cone with a height of 6 and a diameter of 10. Leave π in your answer.
- 3-5 Evaluate $6\frac{4}{5} + 2\frac{1}{2} \div 4\frac{3}{8}$.
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- 4-1 Dorie is trying to find Nemo. She swims 3 feet north, 1 yard east, and 7 feet south. How many feet is she from her starting point?
- 4-2 Find the probability of rolling doubles when rolling a pair of fair six-sided dice.
- 4-3 If $a \oplus b = \frac{1}{3}(4a - b)$ and $x \oslash y = 6x + y^2$, evaluate $(3 \oplus 6) \oslash 2$.
- 4-4 $421_5 + 302_5 =$ _____ ₁₀
- 4-5 Solve for x: $\sqrt[3]{64} + \sqrt[4]{16} = \sqrt{16} + \sqrt[5]{8}$

EXTRA

- E1. Solve for y: $\frac{4}{5}y - 19 = 41$
- E2. Using a standard deck of cards, find the probability of drawing a red card followed by a black Jack, without replacement.
- E3. Find the sum of the interior angle measures in a pentagon.