Angeles City Science High School

Math 10

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Practice C: Compute whats missing

1. $N = 5263$
$e = 3\%$ or 0.03
$n = ?$
$n = \frac{N}{1+Ne^2}$
$n = \frac{5263}{1+(5263)(0.03)^2}$
$n = \frac{5263}{1+4.7367}$
$n = \frac{5263}{5.7367}$
$n = 917.43 \approx$ **917**

2. $N = 8000$
$e = 5\%$ or 0.05
$n = ?$
$n = \frac{N}{1+Ne^2}$
$n = \frac{8000}{1+(8000)(0.05)^2}$
$n = \frac{8000}{1+20}$
$n = \frac{8000}{21}$
$n = 380.95 =$ **381**

3. $N = 1000$
$e = 2\%$ or 0.02
$n = ?$
$n = \frac{N}{1+Ne^2}$
$n = \frac{1000}{1+(1000)(0.02)^2}$
$n = \frac{1000}{1+(1000)(0.0004)}$
$n = \frac{1000}{1+0.4}$
$n = \frac{1000}{1.4}$
$n = 714.29 \approx$ **714**

4. $N = 2400$
$e = ?\%$
$n = 800$
$e = \sqrt{\frac{N}{n} - 1}$
$e = \sqrt{\frac{2400}{800} - 1}$
$e = \sqrt{\frac{3-1}{2400}}$
$e = \sqrt{\frac{2}{2400}}$
$e = \sqrt{0.000833}$
$e = 0.02887$
$e = 0.02887 \times 100$
$e = 2.887 \approx$ **2.89%**

5. N=?

e = 4% or 0.04

n = 588

$N = \frac{-n}{ne^2 - 1}$

$N = \frac{-588}{(588)(0.04)^2 - 1}$

$N = \frac{-588}{(588)(0.0016) - 1}$

$N = \frac{-588}{0.9408 - 1}$

$N = \frac{-588}{-0.0592}$

$N = 9932.43 \approx \boxed{9932}$

Practice D: Purok Sample

A. N = 3000

e = 5% or 0.05

n = ?

$n = \frac{N}{1 + Ne^2}$

$n = \frac{3000}{1 + (3000)(0.05)^2}$

$n = \frac{3000}{1 + (3000)(0.0025)}$

$n = \frac{3000}{1 + 7.5}$

$n = \frac{3000}{8.5}$

$n = 352.94 \approx \boxed{353}$

B. Purok	Population	Percentage	Percentage × n	Sample
1	800	$\frac{800}{3000} \times 100 = 27\%$	0.27 × 353	95.31 ≈ 95
2	400	$\frac{400}{3000} \times 100 = 13\%$	0.13 × 353	45.89 ≈ 46
3	500	$\frac{500}{3000} \times 100 = 17\%$	0.17 × 353	60.01 ≈ 60
4	600	$\frac{600}{3000} \times 100 = 20\%$	0.2 × 353	70.6 ≈ 71
5	700	$\frac{700}{3000} \times 100 = 23\%$	0.23 × 353	81.19 ≈ 81
Total	N = 3000	100% (or 1)		n = 353