Percent Population Problems Worksheet

1. In a pet shelter that is occupied by 55% dogs and 45% cats, 60% of the animals are brought in by concerned people who found these animals in the streets. If 90% of the dogs are brought in by concerned people, what is the percent of cats that are brought in by concerned people?

2. An artist wants to make a particular teal color paint by mixing a 75% blue hue and 25% yellow hue. He mixes a blue hue that has 85% pure blue pigment and a yellow hue that has 60% of pure yellow pigment. What is the percent of pure pigment that is in the resulting teal color paint?

3. On Mina's block, 65% of her neighbors do not have any pets, and 35% of her neighbors own at least one pet. If 25% of the neighbors have children but no pets, and 60% of the neighbors who have pets also have children, what percent of the neighbors have children?

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1. In a pet shelter that is occupied by 55% dogs and 45% cats, 60% of the animals are brought in by concerned people who found these animals in the streets. If 90% of the dogs are brought in by concerned people, what is the percent of cats that are brought in by concerned people?

Let c represent the percent of cats brought in by concerned people.

$$0.55(0.9) + (0.45)(c) = 1(0.6)$$
$$0.495 + 0.45c = 0.6$$
$$0.495 - 0.495 + 0.45c = 0.6 - 0.495$$
$$0.45c = 0.105$$
$$0.45c \div 0.45 = 0.105 \div 0.45$$
$$c \approx 0.233$$

About 23% of the cats brought into the shelter are brought in by concerned people.

2. An artist wants to make a particular teal color paint by mixing a 75% blue hue and 25% yellow hue. He mixes a blue hue that has 85% pure blue pigment and a yellow hue that has 60% of pure yellow pigment. What is the percent of pure pigment that is in the resulting teal color paint?

Let p represent the teal color paint.

$$(0.75 \times 0.85p) + (0.25 \times 0.6p) = 0.7875p$$

78.75% of pure pigment is in the resulting teal color paint.

3. On Mina's block, 65% of her neighbors do not have any pets, and 35% of her neighbors own at least one pet. If 25% of the neighbors have children but no pets, and 60% of the neighbors who have pets also have children, what percent of the neighbors have children?

Let n represent the number of Mina's neighbors.

Neighbors who do not have pets: $0.65n$

Neighbors who own at least one pet: $0.35n$

Neighbors who have children but no pets: $0.25 \times 0.65n = 0.1625n$

Neighbors who have children and pets: $0.6 \times 0.35n = 0.21n$

Percent of neighbors who have children: $0.1625n + 0.21n = 0.3725n$

37.25% of Mina's neighbors have children.

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