Name: _____ Class: Algebra B1 or B2

If a die is rolled once, what is the theoretical probability (written as a fraction) of each outcome? (1 point each)

P(1)= $\frac{1}{6}$ P(2)= $\frac{1}{6}$ P(3)= $\frac{1}{6}$ P(4)= $\frac{1}{6}$

P(7)= 0 P(5)= $\frac{1}{6}$ P(even #)= $\frac{1}{2}$

P(odd #)= $\frac{1}{2}$ P(a # 1 to 6)= 1

Put the following high temps in a stem and leaf plot 97, 94, 95, 98, 99, 94, 88, 79, 85, 88, 90. Then find the mean, median, mode and range.

79, 85, 88, 88, 90, 94, 94, 95, 97, 98, 99

key 7|9 = 79

7	9
8	5 8 8
9	0 4 4 5 7 8 9

median - 94

mode - 88, 94

range - 99 - 79 = 20

mean - 91.5

5
79
85
88
88
188
185
195
+ 99
1007

Solving Equations:

❑ **Solving 1 step equations:**

1) $x - 13 = 45$

+13 +13

$x = 58$

2) $14 + c = -5$

-14 -14

$c = -19$

3) $d + (-1.2) = -7.3$

$d + 1.2 = -7.3$

-1.2 -1.2

$d = -8.5$

4) $\frac{3}{4}n = 30$

$\frac{3}{4}$ $\frac{3}{4}$

$n = 30 \times \frac{4}{3}$

$= 40$

5) $5^{+2} = \frac{r}{2} \times 2$

$r = 10$

6) $\frac{6x}{6} = \frac{-42}{6}$

$x = -7$

❑ **Solving multi-step equations:**

1) $4p - 7 = 5$

+7 +7

$\frac{4p}{4} = \frac{12}{4}$

$p = 3$

2) $6 = 4v + 2$

-2 -2

$\frac{4}{4} = \frac{4v}{4}$

$1 = v$

3) $\frac{y}{3} + 6 = -45$

-6 -6

$3 \times \frac{y}{3} = -51 \times 3$

$y = -153$

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4) $\frac{c}{-4} - 8 = -42$

$+8 \quad +8$

$\frac{c}{-4} = -34(-4)$

$c = 136$

5) $\frac{4d+5}{7} = \frac{7}{1}$

$(4d+5) = 7 \times 7$

$4d+5 = 49$

$-5 \quad -5$

$\frac{4d}{4} = \frac{44}{4}$ $d = 11$

❑ **Solving equations with variables on both sides:**

1) $n - 2 = 4 - 2n$

$+2n \quad +2n$

$3n - 2 = 4$

$+2 \quad +2$

$3n = 6$

$n = 2$

2) $3t - 2(t+3) = t$

$3t - 2t - 6 = t$

$t - 6 = t$??

$-t \quad -t$

No solution

$0 - 6 = 0$

$-6 = 0$

3) $2(b-3) = 3(b-1)$

$2b - 6 = 3b - 3$

$-2b \quad -2b$

$-6 = b - 3$

$+3 \quad +3$

$-3 = b$

4) $\frac{x-2}{6} = \frac{x}{2}$

$2(x-2) = 6x$

$2x - 4 = 6x$

~~$+4 \quad +4$~~

$2x - 4 = 6x$

$-2x \quad -2x$

$\frac{-4}{4} = \frac{4x}{4}$

$-1 = x$

5) $3 - \frac{5}{6}y = 2 + \frac{1}{6}y$

$+\frac{5}{6}y \quad +\frac{5}{6}y$

$3 = 2 + y$

$-2 \quad -2$

$1 = y$

Solve ratios and proportions:

1) $\frac{2}{3} = \frac{b+5}{9}$

$3(b+5) = 2 \times 9$

$3b + 15 = 18$

$-15 \quad -15$

$3b = 3$

$b = 1$

2) $\frac{6}{8} = \frac{9}{s-4}$

$6(s-4) = 9 \times 8$

$6s - 24 = 72$

$+24 \quad +24$

$\frac{6s}{6} = \frac{96}{6}$

$s = 16$

Percent of Change

$$\frac{\textit{amount of change}}{\textit{original amount}} = \frac{\textit{new amount} - \textit{original amount}}{\textit{original amount}} = \frac{r}{100}$$

1) Determine your unknown
2) Fill in what you know and solve

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1) Jane wants to make a doll that is a replica of a friend. The scale that she will use is 1cm on the doll will represent 2 inches on her friend. Her friend's foot measures 8.5 inches. What will be the size of the doll's foot?

$\frac{1}{2} = \frac{x}{8.5}$

$\frac{\text{doll}}{x} \quad \frac{1\text{cm}}{x} = \frac{2\text{in}}{8.5} \quad \frac{\text{friend}}{8.5}$

$\frac{2x}{2} = \frac{8.5}{2}$

$x = 4.25\text{ cm}$

2) Brandy paid $6.75 for 3 pounds of mixed nuts. At this price, how much would 5 pounds cost?

$\frac{\$6.75}{3\text{lbs}} = \frac{?}{5\text{lbs}}$

$\frac{3x}{3} = \frac{6.75 \times 5}{3}$

$x = \$11.25$

$6.75 \times 5 = 33.75$

$3\overline{)33.75}$ → 11.25, 33, 7, 6, 15

3) State whether each percent of change is a percent of increase or decrease. Then, find each percent of change.

a) original: 18
new: 18.9

increase

$18\overline{)90}$ → 5, 90, 90

$\frac{.90}{18} = \frac{x}{100}$

$90 = 18x$

$5\% = x$

b) original: 125
new: 106.25

decrease

$\frac{18.75}{125} = \frac{x}{100}$

$x = 15\%$

$125\overline{)1875}$ → 15, 125, 625, 625

$\frac{1875x}{125} = \frac{125x}{125}$

4) Due to hard times at his company, Jared was told that his salary would be cut by 10%. If Jared was making $62,000, what will he new salary be?

$\frac{x}{62{,}000} = \frac{10}{100}$

$\frac{100x}{100} = \frac{620000}{100}$

$x = 6200$

$62000 - 6200 = \$55800$

5) A magazine subscription is $52 a year if you buy it every week off the newsstand. If you buy a subscription, you can buy it at a 15% discount, what is the discounted price?

$\frac{x}{52} = \frac{15}{100}$

$\frac{780}{100} = \frac{100x}{100}$

$7.80 = x$

$52.00 - 7.80 = \$44.20$

$52 \times 15 = 260, 52, 780$

Be sure to look over all the problems with table.

#19-21, 29, 28 on pg 175 & 176