



PROBABILITY, STATISTICS, & GRAPHING

1. Give the probability that the roll of a die will show two.
2. Give the probability that the roll of a die will show two or four.
3. Give the expected number of rolls that will result in two if a die were rolled 30 times.
4. Make a tree diagram to find the number of outcomes for tossing two coins.
5. Give the probability of getting two heads if two coins were tossed.
6. Multiply to find the number of possible outcomes for choosing a four-digit code number if each digit is chosen at random.
7. Give the probability that a four-digit code number chosen at random will be 0495 or 7326.
8. If there were 5 cards spelling T A L L Y, Give the probability of drawing two cards at random that show 'L' if the first card is not replaced before making the second draw.
9. Using the results of the experiment at the right, predict the probability that, on the next toss, the tack would land point up.
10. Give the expected number of tosses that will land point up if the tack used in the experiment were tossed 60 times.

| Outcome | Tally |
|---|--------------------|
|  Point up | ### ### ### III |
|  Point down | ### I |

Use this data for questions 11-13:

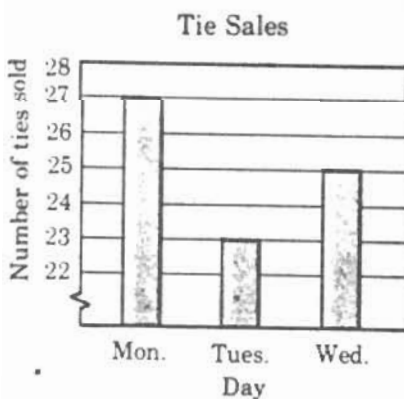
172 168 163 180 172 178 160
154 167 172 165

11. Find the mean height in centimeters for these students. Round the answer to the nearest tenth.
12. Find the median height in centimeters for the set of data.
13. Find the mode height in centimeters for the set of data.

Use this graph for #14

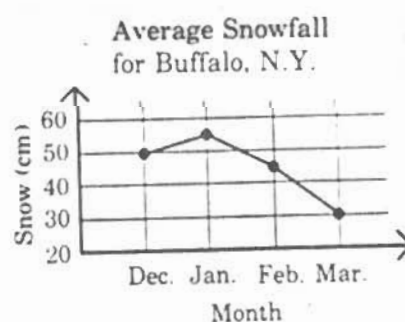
Use this table for #15

Use this graph for #16



Favorite Choices of Tie Materials

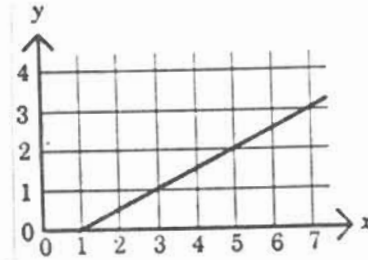
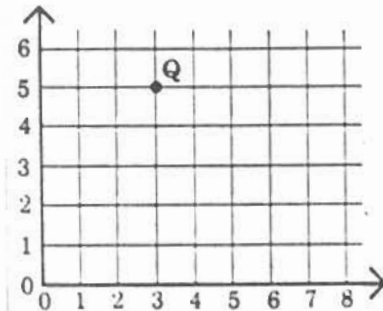
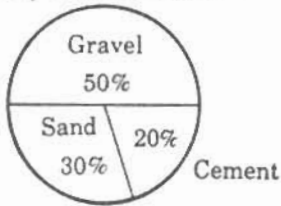
| Material | Frequency (Number of times chosen) |
|-----------|------------------------------------|
| Polyester | 30 |
| Silk | 21 |
| Acetate | 24 |



14. On which days were more than 24 ties sold?
15. Make a bar graph using the frequency table.
16. Find the average snowfall for Buffalo in March.

17. Make a line graph to show the average monthly temperature for Buffalo from June to September using this data: June = 13 degrees, July = 16 degrees, August = 15 degrees, and September = 11 degrees C. Use this graph for #18 & #19 Use this graph For #22 Use this graph For #24

Dry Concrete Mix

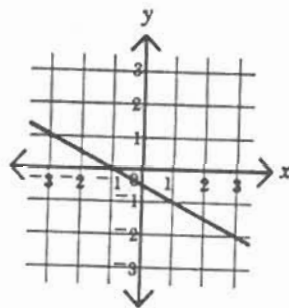
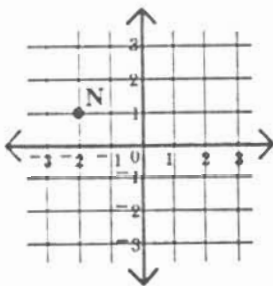


18. Which ingredient would be used in greater quantity than the others to make dry concrete mix?
 19. Find how much gravel is needed to make 120 kilograms of dry concrete mix.
 20. Draw a circle and construct a central angle of 105 degrees.
 21. Construct a circle graph to show the percent of each fiber that makes up this fabric blend: Polyester 50%, Acrylic 40%, and Nylon 10%.
 22. Give an ordered pair for point Q -- see above
 23. Plot and label point R(6,2) on a grid.
 24. Read the graph above and find the missing numbers in the table at the right.
 25. Draw the graph of the equation $y = 2x - 2$ on a grid.

| x | y |
|---|---|
| 3 | ■ |
| ■ | 2 |
| 7 | ■ |

Use this graph for #26

Use this graph for #28



26. Give an ordered pair for point N.
 27. Plot and label point T(-2, -1) on a grid.
 28. Read the graph above and find the missing numbers in the table at the right.
 29. Draw the graph of the equation $y = x + 2$ on a grid.

| x | y |
|----|----|
| -3 | ■ |
| ■ | -1 |
| 3 | ■ |

Graphing

One of the concepts that is very difficult for the tactile learner to comprehend is graphing/statistics, a concept that is to be stressed more heavily in light of the new math Standards. The tactile learner just can't understand statistics by simply being told or by seeing graphs in a textbook. The activity I'll do in today's presentation is one that is very successful for **all** students, tactile learners and non-tactile learners. After you do as much with your students as we do in the presentation today, "milk it for all it's worth":

What is the mode? the median? the mean?

What do you predict would happen if we had only females "post it"?

What do you predict would happen if we had only males "post it"?

What is the probability that the next person to walk into the room would have 4 pockets?

What can we generalize from this?

Write a paragraph on the word processor to indicate our findings and their implications.

Enter the information into a spreadsheet. Have that spreadsheet draw the graph. Import that graph into your word processor document. Print your report.

Change this graph to a line graph. a circle graph. a box plot. etc.

For teaching about graphing and statistics, there is no better tool than the **USA Today** newspaper! The front page of each section has a colored graph that is good for days of instruction. (See the back of this sheet for one suggestion.) Inside the back page of the front section of the newspaper is always a controversial issue that is the foundation for good discussions and excellent data collection possibilities. The pros and cons of the issue are discussed with enough background information to allow students to be well informed.

The USA Today vending box was purposely designed to look like a TV.