

Midterm Practice Test

1) Terry is getting supplies for a construction project. There are 5 hammers, 6 drills and 3 ladders to choose from. If he wants one of each, how many possible options are there?

FCP

$$5 \times 6 \times 3 = \boxed{90}$$

3) In a class of 18 students the teacher wants to form a group of 4 to answer homework questions. How many different possible groups are there?

$$18 \text{ nCr } 4 = \boxed{3060}$$

5) There are 15 runners in a race, how many different ways could they place 1st, 2nd and 3rd?

$$15 \text{ nPr } 3 = \boxed{2730}$$

7) A company ships bags of chips. In one shipment there are 30 bags and it is estimated that 6 are under filled. What is the probability that someone picking out 4 bags gets all under filled bags?

$$\frac{6 \text{ nCr } 4}{30 \text{ nCr } 4}$$

$$15/27405 = 1/1827 = 5.473 \text{ E } -4$$

9) When rolling a die what is the probability of rolling a 5 or 6?

$$1/3$$

10) James has a bag of marbles. There are 4 red, 5 green and 6 blue marbles. What is the probability of him selecting 3 red marbles if he replaces after each selection?

$$4/15 \times 4/15 \times 4/15 =$$

$$64/3375$$

10) James has a bag of marbles. There are 4 red, 5 green and 6 blue
11) ... what is the probability of selecting 3 green marbles if he does replace after each selection?

$$1/3 \times 1/3 \times 1/3 = 1/27$$

12) ... what is the probability of selecting 4 marbles and getting 2 red and 2 blue?

$$\frac{4 \text{ nCr } 2 \times 5 \text{ nCr } 2}{15 \text{ nCr } 4} = 4/91$$

13) ... what is the probability of selecting 4 marbles and getting all green or all blue?

$$\frac{5 \text{ nCr } 4 + 6 \text{ nCr } 4}{15 \text{ nCr } 4} = 4/273$$

14) ... what is the probability of selecting 4 marbles and getting exactly 3 green?

$$\text{binompdf}(4, 5/15, 3) = 8/81 \text{ or } 0.0988$$

{56, 65, 76, 77, 77, 78, 83, 85, 87, 88, 90, 90, 90, 95, 100}

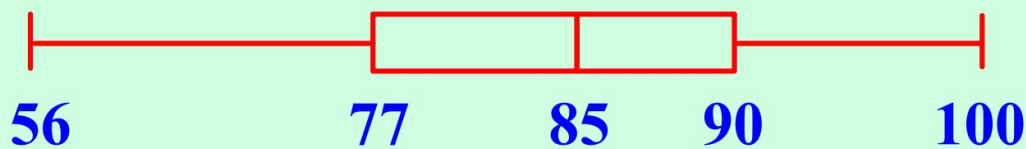
14) Find the mean, median and mode.

82.47, 85, 90

15) Find the range, IQR, standard deviation and variance.

44, 13, 11.014, 121.315

16) Create a box plot for the data



What percent of values are above 3rd quartile?

25%

What percent of values are below median?

50%

A course has an average on a test of 83, 1000 testers, with a standard deviation of 4 points. Create and label a normal distribution:

22) What percent of students scored above a 79?

84%

23) What percent of students scored between a 75 and an 87?

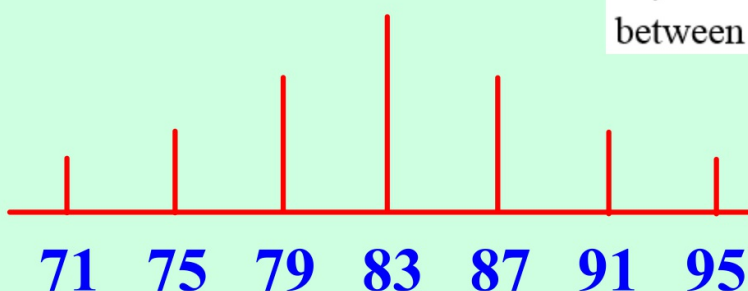
81.5%

26) How Many students scored above an 87?

.16 x 1000 = 160

27) How Many students scored between an 83 and 91?

.475 x 1000 = 475



Unit 4 Right Triangle Trig

34) Reference angle for 79

$$79^\circ$$

35) Reference angle for 256

$$76^\circ$$

36) Reference angle for 145

$$35^\circ$$

37) Reference angle for 299

$$61^\circ$$

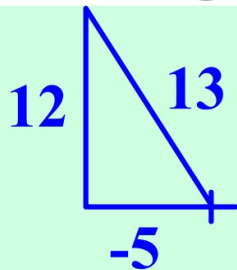
38) Coterminal angle for 4560

$$240^\circ$$

39) Coterminal angle for - 3120

$$120^\circ$$

41) Find the 6 trig ratios from (-5, 12)



$$\sin\theta = 12/13$$

$$\csc\theta = 13/12$$

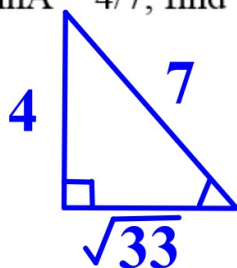
$$\cos\theta = -5/13$$

$$\sec\theta = -13/5$$

$$\tan\theta = -12/5$$

$$\cot\theta = -5/12$$

42) If $\sin A = 4/7$, find the other 5 ratios



$$\cos A = \sqrt{33}/7$$

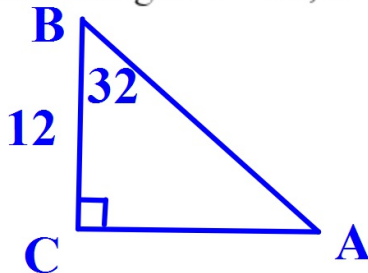
$$\tan A = 4\sqrt{33}/33$$

$$\csc A = 7/4$$

$$\sec A = 7\sqrt{33}/33$$

$$\cot A = \sqrt{33}/4$$

43) Solve the triangle: $C = 90$, $a = 12$ and $B = 32$

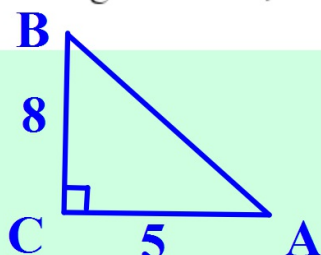


$$A = 58^\circ$$

$$b = 7.5$$

$$c = 14.2$$

44) Solve the triangle: $C = 90$, $a = 8$ and $b = 5$



$$A = 58^\circ$$

$$B = 32^\circ$$

$$c = 9.4$$

Welcome to the Township of Edgetonfieldville City

The police in the Township of Edgetonfieldville City have broken the city limits down into Sectors, simply identified with letters A – H. The following map shows how those Sectors broken up and the percent of the past 200 cases of theft over \$300 for the city that occurred the corresponding Sector.

