

Questions on 8.6 HW?

SM3H - Module 8 SE.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools SM3H - Module 8 ... x Secondary Math III ...

36 / 44 125%

	Cats	Dogs	Total
Boys	32	68	100
Girls	41	11	52
Total	73	79	152

*Intersection "and"*

*Union "or"*

- $P(B) =$
- $P(G) =$
- $P(C) =$
- $P(D) =$
- $P(C|G) = \frac{41}{52}$  *cat given girl*
- $P(C \text{ or } B) = \frac{41+32+68}{152}$
- $P(D|B) =$
- $P(B \cap D) = \frac{68}{152}$

9. If this is a random sample from a school, what total percent of boys in this school do you think would prefer dogs?

10. What percent of students at the school would prefer cats?

11. If you sampled a different 152 students, would you get the same percentages? Explain.

12. What would happen to your percentages if you used a larger sample size?

8.50 x 11.00 in

Topic: Normal Curves

SKIP 17-20

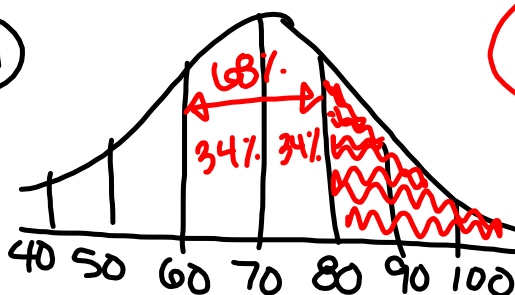
The average resting heart rate of a young adult is approximately 70 beats per minute with a standard deviation of 10 beats per minute. Assuming resting heart rate follows a Normal Distribution, answer the following questions.

21. Draw and label the Normal curve that describes this distribution. Be sure to label the mean, and the measurements 1, 2, and 3 standard deviations out from the mean.

22. What percent of people have a heart rate between 55 and 80 beats per minute? Label these points on your Normal curve above and shade in the area that represents the percent of people with heartbeats between 55 and 80 beats per minute.

23. If a resting heart rate above 80 beats per minute is considered unhealthy, what percent of people have an unhealthy heart rate?

(21)



(23)  $50 - 34\% = 16\%$

$$\frac{100 - 68}{2} = 16\%$$

## 8.7 Slacker's Simulation

### *A Solidify Understanding Task*

I know a student who forgot about the upcoming history test and did not study at all. To protect his identity, I'll just call him Slacker. When I reminded Slacker that we had a test in the next class, he said that he wasn't worried because the test has 10 true/false questions. Slacker said that he would totally guess on every question, and since he's always lucky, he thinks he will get at least 8 out of 10.



I'm skeptical, but Slacker said, "Hey, sometimes you flip a coin and it seems like you just keep getting heads. You may only have a 50/50 chance of getting heads, but you still might get heads several times in a row. I think this is just about the same thing. I could get lucky."

1. What do you think of Slacker's claim? Is it possible for him to get 8 out of 10 questions right? Explain.

Possible, not probable.

I thought about it for a minute and said, "Slacker, I think you're on to something. I'm not sure that you will get 80% on the test, but I agree that the situation is just like a coin flip. It's either one way or the other and they are both equally likely if you're just guessing." My idea is to use a coin flip to simulate the T/F test situation. We can try it many times and see how often we get 8 out of 10 questions right. I'm going to say that if the coin lands on heads, then you guessed the problem correctly. If it lands on tails, then you got it wrong.

Try it a few times yourself. To save a little time, just flip 10 coins at once and count up the number of heads for each test.

	# Correct (Heads)	# Incorrect (Tails)	% Correct
Test 1	6	4	60%
Test 2	5	5	50%
Test 3	4	6	40%
Test 4	3	7	30%
Test 5	4	6	40%

Did you get 8 out of 10 correct in any of your trials?

No

8/10: ||||

Based on your trials, do you think Slacker has a good chance of getting 80% correct?

No,  $\frac{4}{130}$  8 of 10's for whole class

Use technology to 50 simulate more tests. Now what do you think of Slacker's chances of getting 80% correct. Explain why.

SKIP

SAGE REVIEW PACKET:

-Work on #40-50 today

Secondary Math III Review Questions.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools Secondary Math III ... x

3 / 10 125%

**11. Use a graphing calculator to solve the system of equations.**

$$y = 2x - 7$$
$$y = 2x^2 - 12x + 15$$

Round to the nearest hundredth.

*(2.38, -2.24)*  
*(4.62, 2.24)*

**12. What are the leading coefficient and degree of the polynomial?**

$$-5x + 20x^3 + 1 - 8x^4$$

Leading coefficient:

Degree:

8.50 x 11.00 in

Secondary Math III Review Questions.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools Secondary Math III ... x

6 / 10 125%

24. Use the remainder theorem to find  $P(3)$  for  $P(x) = x^4 - 2x^3 - 5x^2 + 7$ .  
 Specifically, give the quotient and the remainder for the associated division and the value of  $P(3)$ .

$P(3) = (3)^4 - 2(3)^3 - 5(3)^2 + 7 = -11$

$$\begin{array}{r}
 x^3 + x^2 - 2x - 6 \\
 \hline
 x - 3 \overline{) x^4 - 2x^3 - 5x^2 + 0x + 7} \\
 \underline{-(x^4 - 3x^3)} \phantom{+ 7} \\
 3x^3 - 5x^2 \phantom{+ 0x + 7} \\
 \underline{-(3x^3 - 9x^2)} \phantom{+ 7} \\
 4x^2 + 0x \phantom{+ 7} \\
 \underline{-(4x^2 - 12x)} \phantom{+ 7} \\
 12x + 7 \\
 \underline{-(12x - 36)} \\
 43
 \end{array}$$

25. Solve for  $u$ .

$$(3u + 12)(u^2 - 11u + 28) = 0$$

26. Find the average rate of change of  $g(x) = 2x^2 - 8x$  from  $x = 2$  to  $x = 5$ .  
 Simplify your answer as much as possible.

$$\begin{array}{r}
 -6x + 7 \\
 \hline
 -(-6x + 13) \\
 \hline
 -11
 \end{array}$$

27. Suppose that the functions  $f$  and  $g$  are defined as follows.

(26)

$$\frac{g(5) - g(2)}{5 - 2} = \frac{10 - -8}{3} = \frac{18}{3} = 6$$

$g(5) = 10$   
 $g(2) = -8$



Secondary Math III Review Questions.pdf - Adobe Acrobat Reader DC  
File Edit View Window Help  
Home Tools Secondary Math III ... x  
7 / 10 125%

31. Subtract. *common denom: (2)(5)(x+3)*

$$\frac{5}{5} \cdot \frac{x+2}{2x+6} - \frac{x-3}{5x+15} \cdot \frac{2}{2} = \frac{5(x+2) - 2(x-3)}{10(x+3)} = \frac{5x+10-2x+6}{10(x+3)} = \frac{3x+16}{10(x+3)}$$

Simplify your answer as much as possible.

32. Multiply.

$$\frac{12x^3}{34} \cdot \frac{5y^3}{10y^3} = \frac{12x^3 \cdot 5y^3}{34 \cdot 10y^3} = \frac{60x^3y^3}{340y^3} = \frac{3x^3}{5y^3}$$

Simplify your answer as much as possible.

33. Solve for  $u$ , where  $u$  is a real number.

$$u - 5 = \sqrt{49 - 8u}$$

34. Solve for  $x$ .

8.50 x 11.00 in

Secondary Math III Review Questions.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools Secondary Math III ... x

9 / 10 125%

38. Solve for  $x$ .  $7^{-2} = x$

$$\log_7 x = -2$$

Simplify your answer as much as possible.

39. Fill in the missing values to make the equations true.

(a)  $\log_2 5 - \log_2 7 = \log_2 \left(\frac{5}{7}\right)$

(b)  $\log_3 9 + \log_5 11 = \log_5 99$

(c)  $2 \log_9 5 = \log_9 5^2$

40. Use the properties of logarithms to expand  $\log(z^5 x)$ .

Each logarithm should involve only one variable and should not have any exponents.  
Assume that all variables are positive.

41. Solve for  $x$ .

8.50 x 11.00 in

Secondary Math III Review Questions.pdf - Adobe Acrobat Reader DC  
 File Edit View Window Help  
 Home Tools Secondary Math III ... x  
 9 / 10 125%

41. Solve for  $x$ .  
 $\log_4(-1-2x) = 1$

42. Solve for  $x$ .  
 $\ln 7^{-x-3} = 16^{-8x}$

Write the exact answer using base-10 logarithms.

43. Find the exact value of  $\cos \frac{11\pi}{6}$ .

44. Find the terminal point on the unit circle determined by  $\frac{5\pi}{3}$  radians.

Use exact values, not decimal approximations.

45. Sketch  $\theta = \frac{7\pi}{4}$  in standard position.

Handwritten work for problem 42:

$$4^1 = -1 - 2x$$

$$4^1 = -1 - 2x$$

$$\vdots$$

$$(-x-3) \cdot \ln 7 = (-8x) \cdot \ln 16$$

$$-x \cdot \ln 7 - 3 \ln 7 = -8x \ln 16$$

$$-x \ln 7 + 8x \ln 16 = 3 \ln 7$$

$$x(-\ln 7 + 8 \ln 16) = 3 \ln 7$$

$$\frac{3 \ln 7}{-\ln 7 + 8 \ln 16} = x$$

$$x = 0.439$$

Homework

Finish 8.7 "Ready, Set, Go"