

2.7.1 iPod Performance Task (S)

As an extra-curricular activity, you write a *Hot Technology* column for your school newspaper. Recently, the Algebra 1 teachers each received \$500 Apple Gift cards from a successful (and grateful) graduate, and they'd like you to do a comparison of the iPod models currently available and make recommendations for each of them. Your team will be assigned to help one of these teachers.

1. Mr. Ngyun wants to buy all the latest games and he needs internet access. He also wants to upload 30 of the games he already owns from his computer.
2. Miss Landini wants to buy old blues songs to listen to while riding her bike. She also wants to upload her collection of 350 blues songs, including Muddy Waters and Janis Joplin.
3. Mrs. White wants to buy HD movies, especially comedies. She already has 16 of them to upload.
4. Mrs. Kochovsky wants to buy all the newest songs and wants to upload the 2500 pictures of her grandchildren that she has on her computer.
5. Mr. Sanchez wants to buy classic rock albums and wants internet access for Pandora.com. He also wants to upload his collection of 200 CD's.
6. Ms. Chu wants to buy TV Shows. She already has 6 seasons of *The Office* (200 shows) to upload.

The following chart gives a sample of file sizes and prices for the different media available on iTunes. You need to know that 1 GB (one gigabyte) is approximately 1,000 MB (one thousand megabytes). These are measures of how much space digital files take up, and each iPod model has a specific amount of available space (capacity).

Media Type	Average File Size (MB)	Average File Size (GB)	Average Price (\$)
Older Songs	10 MB		0.99
Newer Songs	10 MB		1.29
Albums/CD's	100 MB		11.99
TV Shows	250 MB		2.99
HD movies		4 GB	19.99
Games		0.5 GB	4.99
(Your own) Photos	2 MB		-



Apple.com

Answer the following questions. Show any appropriate work.

1. Which teacher were you assigned to help? _____
2. What type of files do they already own to upload from their computer? _____
3. How much space does each of those files take? _____
4. How many do they have? _____
5. How many gigabytes will those files take up all together? _____

Here is some information from apple.com:

				
	<p>The incredibly small, wearable music player has buttons, and VoiceOver tells you the song or playlist you're listening to. Learn more ▶</p>	<p>Multi-Touch and multi-talented, iPod nano features a built-in FM radio, accelerometer, clock faces, and more. Learn more ▶</p>	<p>With 160GB of storage for music, video, and photos, iPod classic is the take-everything everywhere iPod. Learn more ▶</p>	<p>Have more fun than ever with FaceTime, Retina display, HD video recording, and the powerful A4 chip. Learn more ▶</p>
Capability	Music, audiobooks, podcasts	Music, audiobooks, podcasts, photos, FM radio, Fitness Walk + Run support built in, Nike+ support built in	Music, movies, TV shows, videos, audiobooks, podcasts, photos	Apps, games, music, movies, TV shows, videos, ebooks, audiobooks, podcasts, photos, HD video recording and editing, FaceTime, iMessage, Safari web browser, email, Maps, Nike+ support built in*
Capacity[†] and Price	2GB \$49 16GB \$149	8GB \$129 16GB \$149	160GB \$249	8GB \$199 32GB \$299 64GB \$399

6. Choose the best iPod for _____ (your assigned teacher).

Explain your choice in at least four (4) complete sentences.

Answer the following questions. Show any appropriate work.

7. What type of files does your teacher want to buy from iTunes? _____

8. How much space does each of those files take? _____ in MB or GB? _____

9. What is the capacity of the iPod you chose for your assigned teacher? _____

10. Organize the information about file size in the table below.

	MB	GB
Total space required for the files they already own		
Size of one of the media files your teacher wants to buy		
Capacity of the iPod you chose		

11. Choose a variable to represent the number of files your teacher will be buying from iTunes. _____

12. Write an expression to represent the total space used by the files they already own and the files purchased on iTunes. Use whichever you find easier, MB or GB. _____

13. Write and solve an **inequality** to find out how many new files your teacher can fit on the iPod.

14. After buying the iPod, how much money does your teacher have left? _____

15. Write and solve an **inequality** to find out how many files your teacher can afford to buy.

16. Consider your answers to both [14] and [15]. In terms of money and space, what is the greatest number of files your teacher can buy?
17. If your teacher buys the iPod you chose and the greatest number of media files possible, how much will he or she spend?
18. If your teacher buys the iPod you chose and the greatest number of media files possible, how much space will be left on the iPod?
19. Do you still think the iPod you picked is the best choice? Explain your answer in at least four complete sentences.

From: _____

Regarding: iPod Recommendation

_____, 2011

Dear _____,

We have analyzed your digital media requirements, and we recommend that you use your \$500 gift card to buy an iPod _____. We know that you have _____ to store, and since each _____ takes up _____ GB, you have a total of _____ GB of files to upload. We know that you wanted to buy more _____, and each one takes up _____ GB. We also considered your other requirements, such as _____

_____, and the iPod we chose meets them best because _____

The capacity of the iPod _____ we chose for you is _____ GB. That means you have _____ GB of space left after uploading the files you own, which is enough space for _____ of the digital media files that you want to purchase. The price of the iPod we chose for you is \$_____, leaving you with \$_____ from your gift card. Each _____ that you want to buy costs \$_____, so you can afford to buy _____ of them. Since you cannot buy any number of files in excess of your storage space or your budget, the maximum number of _____ you can buy is _____.

In conclusion, we recommend that you purchase an iPod _____ and _____. You will be spending a total of \$_____, with \$_____ left over, and using a total of _____ GB, with _____ GB of free space remaining.

We hope you find this analysis helpful. Please see page [2] for our calculations.

Sincerely,

Calculations (the mathematics we used to get our results):

Note: we chose the variable _____ to represent the number of new media files you can buy.

1. Here is an **inequality** and its solution showing how many new files you can fit on the iPod.
2. Here is an **inequality** and its solution showing how many files you can afford to buy.
3. Since you cannot buy any number of files in excess of your storage space or your budget, the maximum number of files you can buy is _____.
4. Here are our calculations showing how much you will spend and how much money you will have left.
5. Here are our calculations showing how much space you will use (in GB) and how much space will be left on the iPod.
6. For full credit, submit **each of your copies** of this report, along with **each** of your completed packets.