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Warm-Up

This is a quick check-in to get you in a "learning math" mindset for the day.

Pause the video and complete the warm-up.

You should expect to spend ~5 minutes on this.

Warm-Up : Which seems best?

Taheem started his clothing business by selling his brand of designer jeans in an online store.

His business is expanding, and he wants to start selling in BULK to large retail stores.

1) Which bulk retail contract below seems best to you?

(Move the arrow to show your choice)

VIM

Will purchase jeans from Taheem at the following rate:

Base Price: $30 per pair of jeans

Discount Rate: $0.05 per pair

BROOKLYN DENIM CO

Will purchase jeans from Taheem at the following rate:

Base Price: $25 per pair

Discount Rate: $0.02 per pair

macy's

Will purchase jeans from Taheem at the following rate:

Flat Price : $15 per pair of jeans

2) Explain your choice.

I think that … is best because...

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Launch Activity

This is the teacher-guided part of the lesson.

Here, you'll be introduced to the concepts and skills you'll be learning today.

Pause the lesson video as needed to give yourself time to take notes.

You should expect to spend ~10 minutes on this.

Launch Activity: Matching Revenue Functions

1) Match each revenue function below to one of the three retailers.

VIM **Base Price:** $30 per pair of jeans **Discount Rate:** $0.05 per pair	$R(x) = (30 - .05x)(x)$
BROOKLYN DENIM CO **Base Price:** $25 per pair **Discount Rate:** $0.02 per pair	$R(x) = (25 - .02x)(x)$
macy's **Flat Price** : $15 per pair of jeans	$R(x) = 15x$

Drag the equations To where they belong In this table!

2) [Evaluating Functions]

Which retailer would be the best choice for Taheem if he plans to sell 350 pairs of jeans to a retailer?

We've done this one for you!	$R(x) = (30 - .05x)(x)$	$R(x) = 15x$
$R(x) = (25 - .02x)(x)$ $\rightarrow R(350) = (25 - .02 * 350)(350)$ $\rightarrow R(350) = (18)(350)$ $\rightarrow R(350) = \$6300$	R	

Explain:

If Taheem sells 350 pairs of jeans, I think that … is best because...

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Guided Practice

This is an opportunity for you try out a problem on your own.

Pause the lesson video and give it a shot! Once you've attempted the problem, get some feedback by resuming the video.

Expect to spend ~5 minutes on this.

Learning Target: **(3B)** I can model revenue from a bulk sale by creating a function of the form: $R(x) = (b - dx)(x)$

Skills to Look For:

__ **[Bulk Discount Concept]** I understand that a contract for selling to a BULK retailer involves two quantities:

+the **base price** of the product (I represent this with a variable, ***b***)

+the **discount rate** (I represent this with a variable, ***d***)

__ **[Creating a Revenue Function]** I can create function to represent the revenue for selling *x* products at a bulk discount:

$R(x) = (b - dx)(x)$

__**[Using my Function]** I can use the function I created to calculate the revenue of selling *x* products at a bulk discount.

Damayah has a successful hair business. She started by selling hair bundles online. Now, she has created her own brand and is trying to sell them in bulk to retailers. The first contract she is offered by a local chain of NYC salons is below:

CONTRACT

We pledge to purchase your hair bundles at a base price of $40, minus a discount of $.08 per bundle in the order.

Please respond at your earliest convenience

1) Create a function to represent the revenue Damayah will collect if she accepts this bulk sale contract

$$R(x) = (40 - .08x)(x)$$

bulk discount price formula

2) Complete the table below to show Damayah's potential revenue for bulk sales of different sizes.

x Number of hair bundles in a bulk sale	R(x) the amount of revenue collected
100	(40-.08*100)(100)=($32)(100)=$3200
200	(40-.08*200)(200)+($24)(200)=$4800
275	(40-.08*275)(275)=($18)(275)=$4950
350	(40-.08*350)(350)=($12)(350)=$4200
400	(40-.08*400)(400)=(8)(400)=$3200

3) Make a recommendation: How many bundles should Damayah sell in a bulk order so that she can maximize her revenue?

Independent Practice

This is the part of the lesson you should complete on your own. When you've finished a first draft, submit the assignment on Google Classroom.

Post any questions you have in a comment and be prepared for your teacher to respond.

This is the part of the lesson where you should the most time each day.

Learning Target: (3B) I can model revenue from a bulk sale by creating a function of the form: $R(x) = (b - dx)(x)$

Skills to Look For:

__ **[Bulk Discount Concept]** I understand that a contract for selling to a BULK retailer involves two quantities:

+the **base price** of the product (I represent this with a variable, ***b***)

+the **discount rate** (I represent this with a variable, ***d***)

__ **[Creating a Revenue Function]** I can create function to represent the revenue for selling *x* products at a bulk discount:

$R(x) = (b - dx)(x)$

__**[Using my Function]** I can use the function I created to calculate the revenue of selling *x* products at a bulk discount.

Delailah is looking to sell party supply packages in bulk to Party City.

They offer her a base price of $30 per package with a $.02 discount per package applied to every bulk sale.

1) Create a revenue function to represent the bulk sale contract shown above.

R(x) = `

2) Complete the table below to show Delailah's revenue for bulk sales to Party City.

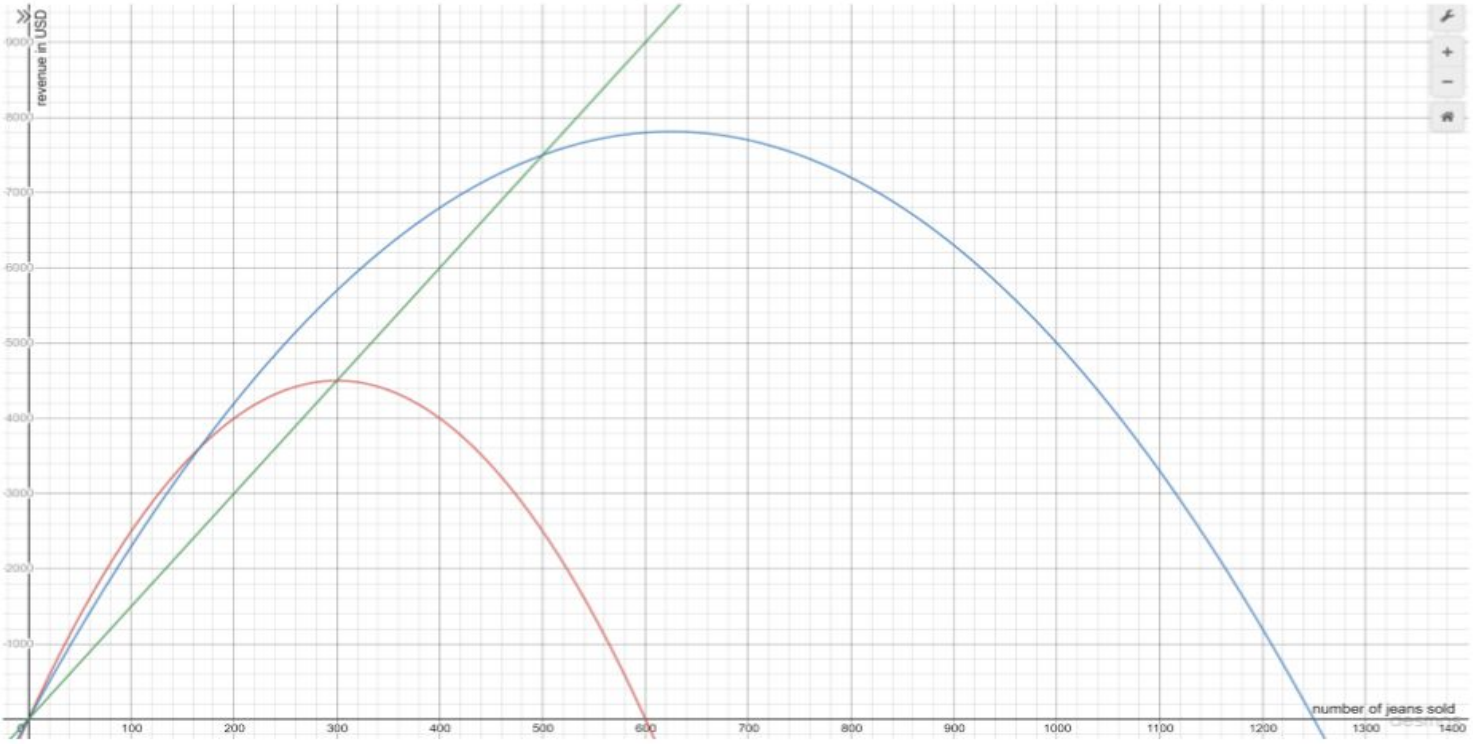
x Number of party packages in a bulk sale	R(x) the amount of revenue collected
200	(40-.08*200)(200)=($24)(200)=$4,800
300	(40-.08*300)(100)=($)(100)=$
600	(40-.08*600)(100)=($32)(100)=$
700	(40-.08*700)(100)=($32)(100)=$
800	(40-.08*800)(100)=($32)(100)=$

3) Make a recommendation: How many packages should Delailah sell in a bulk order so that she can maximize her revenue?

Ready for More? [E-Level]

If you're interested in working towards an 85 or college readiness, try this out!

This graph compares the revenue functions of VIMs, Brooklyn Denim Co and Macy's for Taheem (look back to the warm-up and launch activity.



1) Complete the notice and wonder table below:

I notice...	*I wonder...*
A.	A.
B.	B.

2) Which graph (red, blue or green) represents Macy's bulk sale offer? Explain how you know.

3) At what point does Macy's become the best choice in order to maximize revenue? Explain.