

Name _____

Date _____

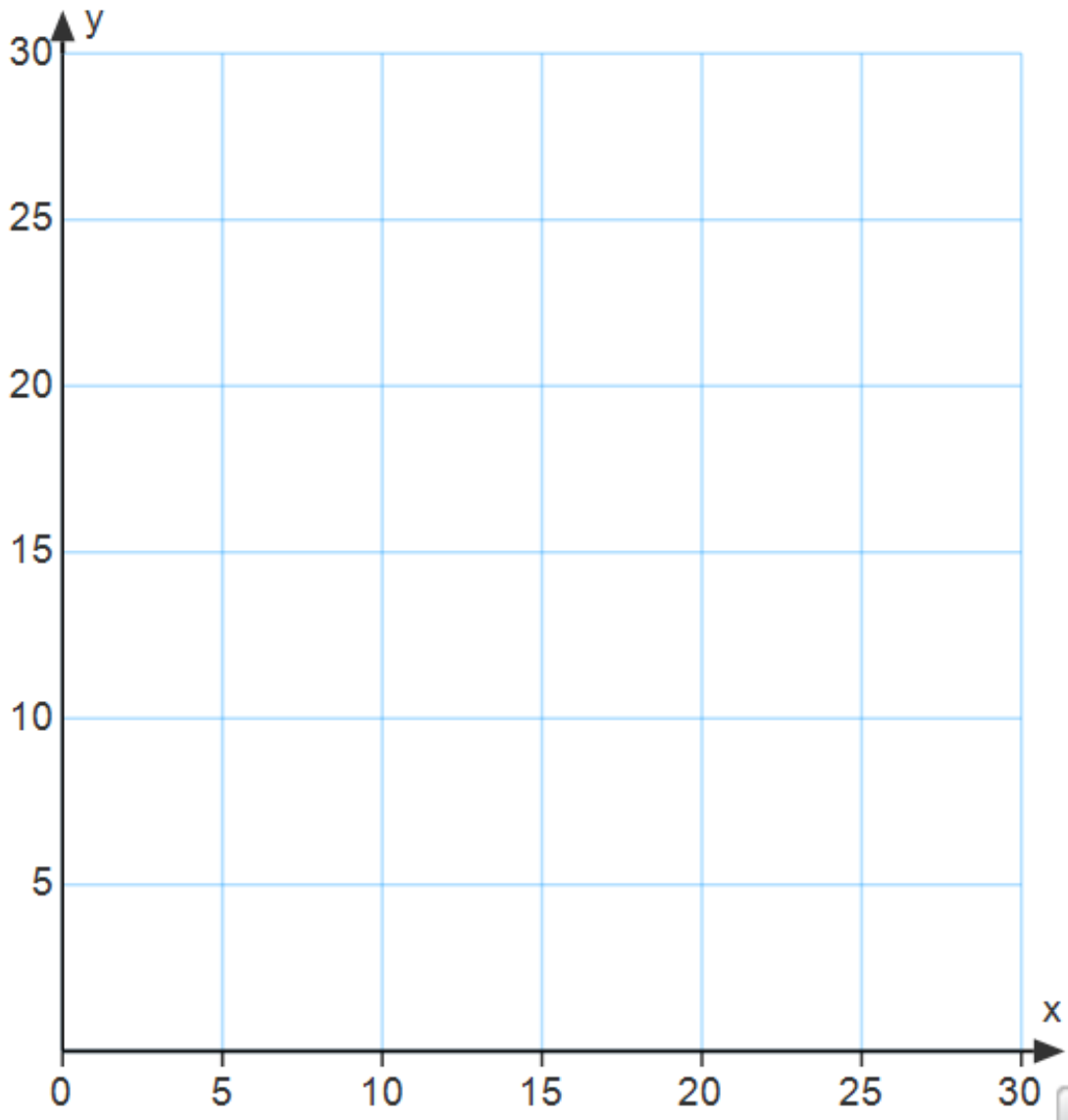
Directions: In the following situations, find the equations, graph the lines, find the point of intersection/solution to the system of equations, and explain what the solution represents.

1. The Music, Music app charges a \$15 membership fee and \$0.50 per download. Yet the Get the Beat app has no membership fee and charges \$1.25 a download.

Music, Music equation:

Get the Beat equation:

Graph each equation on the grid.



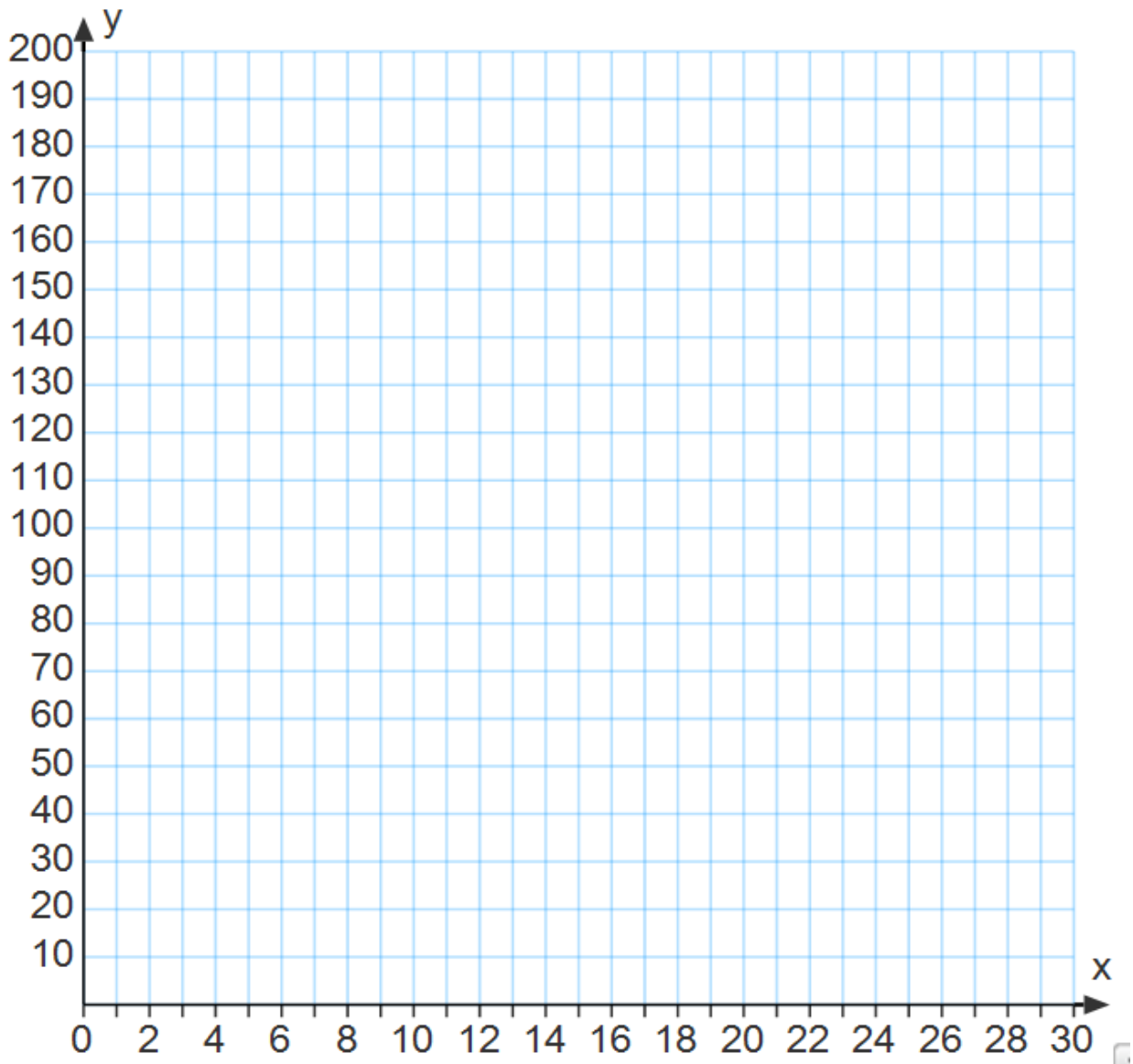
1. For how many downloads is Music, Music cheaper?
2. For how many downloads is Get the Beat cheaper?
3. What is the point of intersection or solution to the system of equations?
4. In the context of this situation, what does the solution represent?

2. The Middleton Junior High Student Council is selling school spirit t-shirts. They order the shirts from Design-It Shirts. The company charges a \$112.50 setup fee and \$4.50 per shirt. The students decide to charge the students \$12 per shirt. How many shirts must the students sell to break even (they don't make money or lose any money)?

Design-It Shirts equation:

Student sales equation:

Graph each equation on the grid.



1. For how many shirts do they lose money?
2. For how many shirts will they make money?
3. What is the point of intersection or solution to the system of equations?
4. In the context of this situation what does this solution represent?

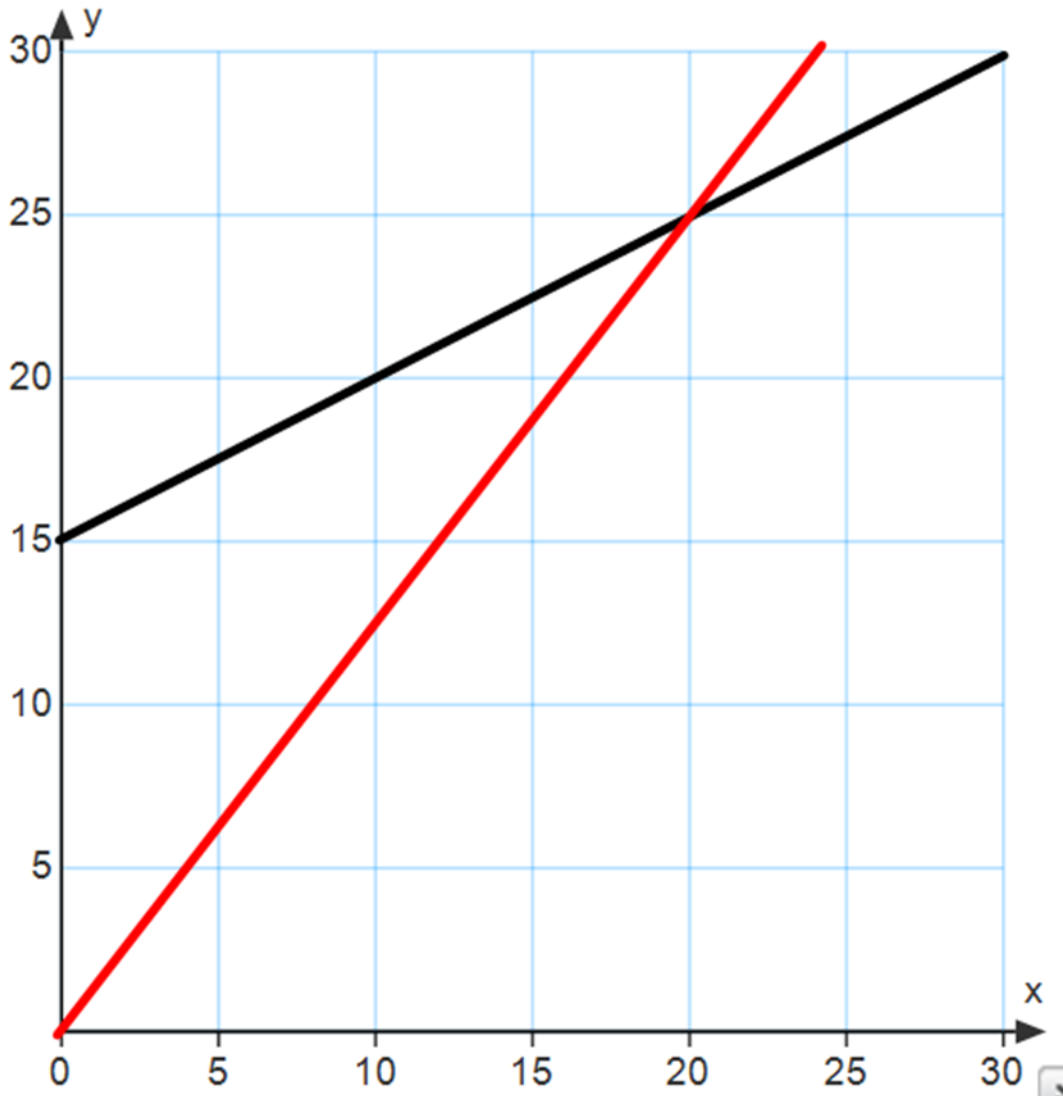
ANSWER KEY

Directions: In the following situations, find the equations, graph the lines, find the point of intersection or solution to the system of equations, and explain what the solution represents.

1. The Music, Music app charges a \$15 membership fee and \$0.50 per download. Yet the Get the Beat app has no membership fee and charges \$1.25 a download.

Music, Music equation: $y = 0.50x + 15$

Get the Beat equation: $y = 1.25x$



Red line represents Get the Beat Black line represents Music, Music

1. For how many downloads is Music, Music cheaper? **More than 20 downloads**
2. For how many downloads is Get the Beat cheaper? **Less than 20 downloads**
3. What is the point of intersection or solution to the system of equations? **(20, 25)**
4. In the context of this situation, what does the solution represent? **20 downloads costs the same from either app.**

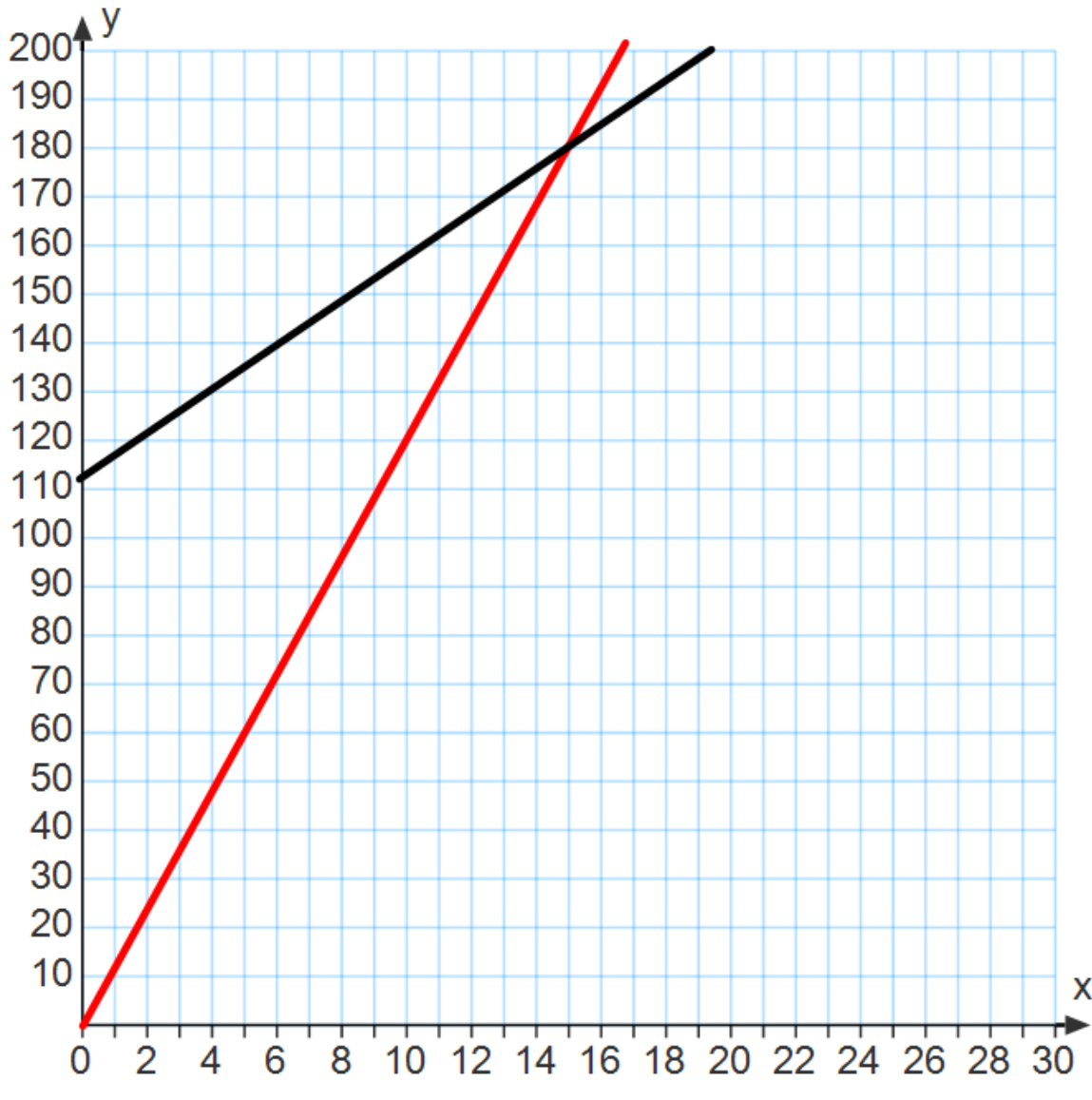
L1-3

Points of Intersection

8.EE.8a

2. The Middleton Junior High Student Council is selling school spirit t-shirts. They order the shirts from Design-It Shirts. The company charges a \$112.50 setup fee and \$4.50 per shirt. The students decide to charge the students \$12 per shirt. How many shirts must the students sell to break even (they don't make money or lose any money)?

Design-It Shirts equation: $y = 4.50x + 112.50$ Student sales equation: $y = 12x$



Red line represents the t-shirt sales Black line represents the charge from Design-It

1. For how many shirts do they lose money? **Less than 15 shirts**
2. For how many shirts will they make money? **More than 15 shirts**
3. What is the point of intersection or solution to the system of equations? **(15, 180)**
4. In the context of this situation what does this solution represent? **If they order 15 shirts it costs \$180 and if they sell 15 shirts they make \$180. They will break even.**