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<u>Graphs of Linear Systems</u> (Standard Form: $Ax + By = C$ )
Example 1: You are running a concession stand at the basketball game. You sell hotdogs for \$1 and sodas for \$2. You sold a total of 120 items. At the end of the night, you made \$200.
Define your variables: h: hoteogs S: sodas
Write a system of equations: h+s=120 /
1h+2s=200 140
Find the x-intercept and y intercept for both equations.
Eq. 1: (0,120) and (120,0) h+s=120 0 80
Eq 2: (0,100) and (200,0) 1h +2s = 200
Graph your system on the same coordinate grid.
(Hotdogs, Sodas) Use an interval of 20 on the x-axis and 20 on the y-axis)  Hotdogs  Hotdogs
State the coordinates of intersection. Explain what these coordinates tell you about the situation.
(40,80) We sold 40 hotdogs 1 80 sodas
that totals 120 items worth \$ 200
example 2: Beaumont is sponsoring a pancake dinner to raise money for a field trip. Each adult ticket will cost \$20 and each child's ticket will cost \$10. You estimate a total of 70tickets to be sold. At the
end of the night, you made \$900.
Define your variables: a: adults a: children 10 of
Define your variables: $a:adults c:children$ Write a system of equations: $a+c=70$ 3%
Define your variables: $a$ : adults $a$ : children  Write a system of equations: $a+c=70$ $a+c=70$ $a+c=900$ $a$ $a$ $a$ $a$ $a$ $a$ $a$
Define your variables: $a:adults \ a:children$ Write a system of equations: $a+c=70$ $20a+10c=900$ Find the x-intercept and y intercept for both equations.
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Define your variables: $a$ : adults $a$ : children  Write a system of equations: $a + c = 70$ Find the x-intercept and y intercept for both equations.  Eq. 1: $a + c = 70$ Eq. 1: $a + c = 70$ Eq. 2: $a + c = 70$ Eq. 1: $a + c = 70$ Eq. 2: $a + c = 70$ Eq. 2: $a + c = 70$ Eq. 2: $a + c = 70$ Eq. 3: $a + c = 70$ Eq. 1: $a + c = 70$ Eq.
Define your variables: $a:adults \ a:children$ Write a system of equations: $a+c=70$ $20a+10c=900$ Find the x-intercept and y intercept for both equations.  Eq. 1: $(0,70)$ and $(70,0) \leftarrow a+c=70$ Eq. 2: $(0,90)$ and $(45,0) \leftarrow 20a+10c=900$ Graph your system on the same coordinate grid.  (Adults Children) Use an interval of 10 on the x-axis.
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