When you have finished, staple all your sheets to the back of this one. Make sure everybody's name is on the sheet(s) he or she worked on. Fill out this sheet.

Sheet A	Name of person doing sheet A
	Sum of answers for all parts of question 1
	Sum of answers for all parts of question 2
	Sum of answers for all parts of question 3
	Sum of all answers on sheet A
Sheet B	Name of person doing sheet B
	Sum of answers for all parts of question 1
	Sum of answers for all parts of question 2
	Sum of answers for all parts of question 3
	Sum of all answers on sheet A
Sheet C	Name of person doing sheet C
	Sum of answers for all parts of question 1
	Sum of answers for all parts of question 2
	Sum of answers for all parts of question 3
	Sum of all answers on sheet A
Sheet D	Name of person doing sheet D
	Sum of answers for all parts of question 1
	Sum of answers for all parts of question 2
	Sum of answers for all parts of question 3
	Sum of all answers on sheet A

Sum of everyone's answers:....

# Sheet A

Show ALL work on a separate sheet of paper.

Here is the way it works. Everyone on your team has the same problem using different numbers. If you keep all the decimals and add up all the answers you will get a specific number. Your teacher will give you your team's total. You are finished when you've shown all your work and matched the number. You may work with anyone in your team but <u>not</u> another team. This is due at the end of class. This is for a grade. How the grade is determined: Doing this for homework in a timely manner, correct individual answers, show all your work correctly, and having the group sum correct.

- 1. Katey threw a penny straight down off a tall building. The building is 354 m tall. If Katey threw the penny down such that it left her hand at 35m/s.
  - a. How fast will the coin be traveling when it hits the pavement?
  - b. How long will the coin be in the air?
- 2. Tom, the cat, is chasing Jerry, the mouse. Jerry runs past Tom, the cat, at 10.00 m/s with an acceleration of 2.25 m/s<sup>2</sup>. At the instant Jerry passes Tom, Tom starts from velocity of 1.00 m/s and accelerates at 3.00 m/s<sup>2</sup>.
  - a. How much time does it take for the Tom to catch up to Jerry?
  - b. What is the velocity of Tom when he catches up to Jerry?



- A rocket is launched from rest with an net upwards acceleration of 35.00 m/s<sup>2</sup>. The rocket accelerates for 1.36 seconds. At this time it begins to coast and decelerate at 13.35 m/s<sup>2</sup> for 67 m before ejecting a parachute.
  - a. How high is the rocket when the parachute was ejected?
  - b. How fast was the rocket traveling when it ejected its parachute?

# Sheet B

Show ALL work on a separate sheet of paper.

Here is the way it works. Everyone on your team has the same problem using different numbers. If you keep all the decimals and add up all the answers you will get a specific number. Your teacher will give you your team's total. You are finished when you've shown all your work and matched the number. This is for a grade. You may work with anyone in your team but not another team. This is due at the end of class.

- 1. Katey threw a penny straight down off a tall building. The building is 292 m tall. If Katey threw the penny down such that it left her hand at 45 m/s.
  - a. How fast will the coin be traveling when it hits the pavement?
  - b. How long will the coin be in the air?
- 2. Tom, the cat, is chasing Jerry, the mouse. Jerry runs past Tom, the cat, at 8.00 m/s with an acceleration of 1.75m/s<sup>2</sup>. At the instant Jerry passes Tom, Tom starts from velocity of 4.00 m/s and accelerates at 5.50 m/s<sup>2</sup>.
  - a. How much time does it take for the Tom to catch up to Jerry?
  - b. What is the velocity of Tom when he catches up to Jerry?

- A rocket is launched with an initial velocity of 6.000 m/s with an net upwards acceleration of 29.0 m/s<sup>2</sup>. The rocket accelerates for 2.46 seconds. At this time it begins to coast and decelerate at 36.0 m/s<sup>2</sup> for 76 m before ejecting a parachute.
  - a. How high is the rocket when the parachute was ejected?
  - b. How fast was the rocket traveling when it ejected its parachute?

# Sheet C

Show ALL work on a separate sheet of paper.

Here is the way it works. Everyone on your team has the same problem using different numbers. If you keep all the decimals and add up all the answers you will get a specific number. Your teacher will give you your team's total. You are finished when you've shown all your work and matched the number. This is for a grade. You may work with anyone in your team but not another team. This is due at the end of class.

- 1. Katey threw a penny straight down off a tall building. The building is 183 m tall. If Katey threw the penny down such that it left her hand at 25 m/s.
  - a. How fast will the coin be traveling when it hits the pavement?
  - b. How long will the coin be in the air?
- 2. Tom, the cat, is chasing Jerry, the mouse. Jerry runs past Tom, the cat, at 5.00 m/s with an acceleration of 3.25 m/s<sup>2</sup>. At the instant Jerry passes Tom, Tom starts from rest and accelerates at 8.000 m/s<sup>2</sup>.
  - a. How much time does it take for the Tom to catch up to Jerry?
  - b. What is the velocity of Tom when he catches up to Jerry?

- A rocket is launched with a velocity of 12.0 m/s with an net upwards acceleration of 18.00 m/s<sup>2</sup>. The rocket accelerates for 5.53 seconds. At this time it begins to coast and decelerate at 24.0 m/s<sup>2</sup> for 208 m before ejecting a parachute.
  - a. How high is the rocket when the parachute was ejected?
  - b. How fast was the rocket traveling when it ejected its parachute?



Show ALL work on a separate sheet of paper.

Here is the way it works. Everyone on your team has the same problem using different numbers. If you keep all the decimals and add up all the answers you will get a specific number. Your teacher will give you your team's total. You are finished when you've shown all your work and matched the number. This is for a grade. You may work with anyone in your team but not another team. This is due at the end of class.

- 1. Katey threw a penny straight down off a tall building. The building is 406 m tall. If Katey threw the penny down such that it left her hand at 28 m/s.
  - a. How fast will the coin be traveling when it hits the pavement?
  - b. How long will the coin be in the air?
- 2. Tom, the cat, is chasing Jerry, the mouse. Jerry runs past Tom, the cat, at 7.00 m/s with an acceleration of 1.333 m/s<sup>2</sup>. At the instant Jerry passes Tom, Tom starts from velocity of 3.00 m/s and accelerates at 2.56 m/s<sup>2</sup>.
  - a. How much time does it take for the Tom to catch up to Jerry?
  - b. What is the velocity of Tom when he catches up to Jerry?

- 3. A rocket is launched from a velocity of 3.000 m/s with an net upwards acceleration of 48.0 m/s<sup>2</sup>. The rocket accelerates for 0.777 seconds. At this time it begins to coast and decelerate at 26.00 m/s<sup>2</sup> for 23.0 m before ejecting a parachute.
  - a. How high is the rocket when the parachute was ejected?
  - b. How fast was the rocket traveling when it ejected its parachute?



Show ALL work on a separate sheet of paper.

Here is the way it works. Everyone on your team has the same problem using different numbers. If you keep all the decimals and add up all the answers you will get a specific number. Your teacher will give you your team's total. You are finished when you've shown all your work and matched the number. This is for a grade. You may work with anyone in your team but not another team. This is due at the end of class.

- 1. Katey threw a penny straight down off a tall building. The building is 225 m tall. If Katey threw the penny down such that it left her hand at 38 m/s.
  - a. How fast will the coin be traveling when it hits the pavement?
  - b. How long will the coin be in the air?
- 2. Tom, the cat, is chasing Jerry, the mouse. Jerry runs past Tom, the cat, at 14.00 m/s with an acceleration of 1.55 m/s<sup>2</sup>. At the instant Jerry passes Tom, Tom starts from velocity of 2.50 m/s and accelerates at 3.30 m/s<sup>2</sup>.
  - a. How much time does it take for the Tom to catch up to Jerry?
  - b. What is the velocity of Tom when he catches up to Jerry?

- A rocket is launched from rest with an net upwards acceleration of 56.00 m/s<sup>2</sup>. The rocket accelerates for 1.12 seconds. At this time it begins to coast and decelerate at 66.00 m/s<sup>2</sup> for 23.0 m before ejecting a parachute.
  - a. How high is the rocket when the parachute was ejected?
  - b. How fast was the rocket traveling when it ejected its parachute?

### Rules for this group problem solving activity

You may refer to your,

- textbooks,
- notes,
- old homework assignments, and
- the other students in your small group of 3.

#### You may not discuss the questions or answers with any other groups.

Transfer each person's answers to the summary sheet.

All of the answers in the summary sheet's boxes equals \_\_\_\_.

If the sum of the answers on your summary sheet does add up to the correct answer, then here is how you can help each other. **<u>SWAP PAPERS</u>**.

- Check their givens for correct,
  - o variables, and
  - $\circ$  numbers with the correct variables.
- Check to see if they have selected the correct formula and/or have set it up correctly.
- Have them explain how they did the math.
- Pass the paper to another group member and start this list over
- If all else fails, do their problem from scratch without looking at their work until you are finished.

#### <u>Turn in:</u>

- Staple all the sheet together
- The summary sheet is on top.
- Each group member's sheet is underneath.

#### How the grade is determined:

- Doing this for homework in a timely manner
- Individual answers
- Having shown all your work correctly
- Have the group sum correct