Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_

Physics Review for Energy Unit

1 Draw all of the triangles of write the formulas for: KE, ME, PEg, PEelastic, P, W, and p

2 Give me an example when work is not being done.

3 Which type of collision bounces off of each other?

4 What two variables affect momentum?

5. A truck tows a car with a force of 6300 N at an angle of 26° above the horizontal. If the car is pulled a total of 330 m in a straight line: Determine the work done by the truck.

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| --- | --- | --- | --- | --- |
| Draw | Units | Formula | Algebra | Solve |

6. What was the power of the truck (from # 5) in 3 seconds?

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| --- | --- | --- | --- | --- |
| Draw | Units | Formula | Algebra | Solve |

7. An 98.0 kg hiker climbs to the top of Red Rock, which has a peak height of 2100 m above sea level. What is the climber’s potential energy (PEg) with respect to sea level?

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| --- | --- | --- | --- | --- |
| Draw | Units | Formula | Algebra | Solve |

8. Another hiker 67.0 kg begins going down the mountain at 3.1 m/s. How much kinetic energy (KE) would the climber have?

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| --- | --- | --- | --- | --- |
| Draw | Units | Formula | Algebra | Solve |

9. A toy has a spring in it with a spring constant of 35 N/m. When the toy’s spring is compressed it decreases by 0.17 m. Calculate the elastic potential energy (PE elastic) stored in the spring.

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| Draw | Units | Formula | Algebra | Solve |

10. A 0.13 kg baseball ball collides going 4.42 m/s head-on with a 0.91 kg bat that is going 2 m/s in the opposite direction. After the collision the objects separate with the ball moving with a velocity of 3.3 m/s in one direction and the bat moving in the opposite direction. What was the final velocity of the bat? (\*DO NOT ROUND UNTIL THE FINAL ANSWER)

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| --- | --- | --- | --- |
| Draw | Units Units | Formula and Algebra | Solve |
|  |  |  |  |

11. A football player (93 kg) is running with a speed of 12 m/s towards another player who has the football (72 kg) who is moving at11 m/s. The football player with the ball is overtaken by the other player. They become one unit. How fast are they going when they collide?

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| --- | --- | --- | --- |
| Draw | Units Units | Formula and Algebra | Solve |
|  |  |  |  |



12. Identify where the greatest kinetic energy is located in the above picture.

13. Use the same diagram above, where is the gravitational potential energy the greatest?