Quizizz

Energy Review Quiz - Physics

Name : _____

Class : _____

Date : _____

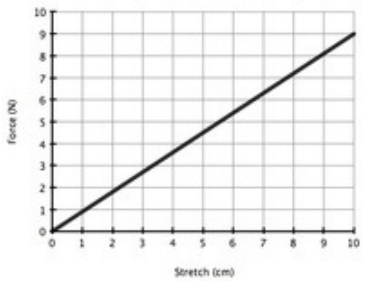
1. A spring, with a spring constant of 200 N/m, is stretched 20cm. How much energy is stored in the spring?

- [ ] a) 40,000 J
- [ ] b) 20 J
- [ ] c) 80 J
- [ ] d) 4 J

2. A spring is stretched back 0.52m using 13N of force. How much energy is stored in the spring?

- [ ] a) 6.76 J
- [ ] b) 3.38 J
- [ ] c) 4.32 J
- [ ] d) 91 J

3. How much energy is stored in this spring when it is stretched 9cm? (note the x-axis units are cm, not m)

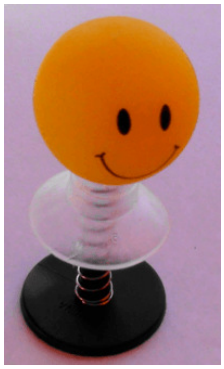


- [ ] a) 8 J
- [ ] b) 0.72 J
- [ ] c) 0.36 J
- [ ] d) 2.38 J

4. How much energy is stored in a 12 kg box that is on a 2.5m high book shelf?

- [ ] a) 294 J
- [ ] b) 30 J
- [ ] c) 2.5 J
- [ ] d) 147 J

5. A spring pop-up toy is compressed against a surface.
Where is the energy stored?



- [ ] a) elastically in the spring
- [ ] b) thermally in the spring
- [ ] c) gravitationally in the spring
- [ ] d) kinetically in the spring

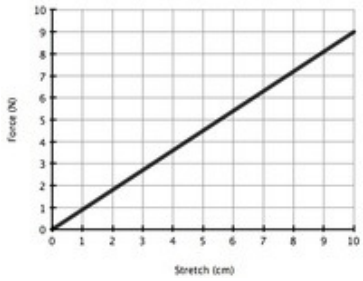
6. If 20 J of energy are stored by stretching a spring 5 cm, how much energy would be stored by stretching it 15 cm?

- [ ] a) 20 J
- [ ] b) 60 J
- [ ] c) 180 J
- [ ] d) 100 J

7. For the area of a graph to represent energy, the Y axis must be _____, and the X axis must be _____.

- [ ] a) Impulse, Displacement
- [ ] b) Energy, Time
- [ ] c) Force, Time
- [ ] d) Force, Displacement

8. What is the spring constant of the spring in this graph? (note the x-axis units are cm, not m)



- [ ] a) 36 N/m
- [ ] b) 72 N/m
- [ ] c) 90 N/m
- [ ] d) 9 N/m

9. What are the proper units for the spring constant?

- [ ] a) m/N
- [ ] b) N/m
- [ ] c) kg*m/s
- [ ] d) J

10. What are the proper units for energy?

- [ ] a) k
- [ ] b) N
- [ ] c) m/s
- [ ] d) J

11. If a spring is stretched twice as far, it will store ___ times as much energy elastically.

- [ ] a) 2
- [ ] b) 4
- [ ] c) 8
- [ ] d) 16

12. If a mass is lifted twice as far, it will store ___ times as much energy gravitationally.

- [ ] a) 2
- [ ] b) 4
- [ ] c) 8
- [ ] d) 16

13. If a mass is pushed twice as far across a surface, it will store ___ times as much energy thermally.

- [ ] a) 2
- [ ] b) 4
- [ ] c) 8
- [ ] d) 16

14. If a mass is moving twice as fast, it will have ___ times as much energy stored kinetically.

- [ ] a) 2
- [ ] b) 4
- [ ] c) 8
- [ ] d) 16

15. The total amount of the energy in the universe is:

- [ ] a) increasing
- [ ] b) decreasing
- [ ] c) constant

16. A 10 kg box is pushed across the floor with a coefficient of friction of 0.5 over a distance of 4m. How much thermal energy was dissipated (released)?

- [ ] a) 5 J
- [ ] b) 196 J
- [ ] c) 40 J
- [ ] d) 98 J

17. A 1000 kg car is moving 30 m/s. How much kinetic energy does it have?

- [ ] a) 1000 J
- [ ] b) 30,000 J
- [ ] c) 15,000 J
- [ ] d) 450,000 J

18. A 1000 kg car is moving with 600,000 J of energy. How fast is it going?

- [ ] a) 34.6 m/s
- [ ] b) 64.3 m/s
- [ ] c) 600 m/s
- [ ] d) 1200 m/s

19. A roller coaster starts stopped at the top of a hill. It then rolls down the frictionless track. Then brakes are applied to bring it to a stop. What types of energy transformations does it go through?

- [ ] a) Nuclear, electric, chemical
- [ ] b) Kinetic, Thermal, Gravitational
- [ ] c) Gravitational, Kinetic, Thermal
- [ ] d) Elastic, Kinetic, Thermal

20. A 2.0kg cat jumps down from a 2m high fence. What will be the cat's speed right before it hits the ground?

- [ ] a) 2.0 m/s
- [ ] b) 39 m/s
- [ ] c) 6.3 m/s
- [ ] d) 15.3 m/s

21. A 0.025kg dart rests against a spring that has been compressed 0.050 meters. The spring constant is 250 N/m. If the dart is fired vertically, how high will it go? (ignore air resistance)

- [ ] a) 0.3 m
- [ ] b) 1.28 m
- [ ] c) 2.75 m
- [ ] d) 4.87 m

22. A 0.025kg dart rests against a spring that has been compressed 0.050 meters. The spring constant is 250 N/m. What is the maximum velocity of the dart after the spring has transferred its energy to it?

- [ ] a) 5 m/s
- [ ] b) 25 m/s
- [ ] c) 50 m/s
- [ ] d) 100 m/s

Answer Key

1. d
2. b
3. c
4. a
5. a
6. c
7. d
8. c
9. b
10. d
11. b
12. a
13. a
14. b
15. c
16. b
17. d
18. a
19. c
20. c
21. b
22. a