

MCAT Physics Equations - Practice Worksheet

Name: _____ Date: _____

Instructions: Use the correct physics equation to solve each problem. Show your substitution step and give the final answer with units.

1. A 2 kg object accelerates at 5 m/s^2 . What is the net force acting on it?
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2. A car starts from rest and reaches 30 m/s in 6 s. What is its acceleration?
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3. How far does an object travel if it starts from rest, accelerates at 4 m/s^2 , for 3 s?
.....
4. A 60 kg person stands on a scale in an elevator accelerating upward at 2 m/s^2 . What does the scale read? ($g = 10 \text{ m/s}^2$)
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5. A 5 kg box is lifted 3 m vertically. How much gravitational potential energy does it gain? ($g = 10 \text{ m/s}^2$)
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6. What is the kinetic energy of a 4 kg ball moving at 6 m/s?
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7. A fluid exerts a pressure of 800 Pa over an area of 0.05 m^2 . What is the force?
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8. A resistor has a voltage of 12 V across it and a current of 3 A through it. What is its resistance?
.....
9. Two resistors of 6 ohms each are connected in parallel. What is the equivalent resistance?
.....
10. A lens has a focal length of 10 cm. An object is placed 40 cm away. Where is the image? (use $1/f = 1/d_o + 1/d_i$)
.....

Answer Key

1. 10 N
2. 5 m/s^2
3. 18 m
4. 720 N
5. 150 J
6. 72 J
7. 40 N
8. 4 ohms
9. 3 ohms
10. $d_i = 13.3 \text{ cm}$ (approximately)

