

**SCIENCE 1.1**  
**WORKSHEET FOUR**

**ANSWERS**  
**FORCES 1**

1.

2. (a)

Net Force =  $5\text{ N}$

Direction = *To the right*

(b)

Net Force =  $7\text{ N}$

Direction = *To the left*

(c)

Net Force =  $10\text{ N}$

Direction = *To the right*

3. *Mass is a measure of the amount of matter that makes up an object. Mass is the same anywhere, regardless of gravity. Mass is measured in kilograms.*

*Weight is the downwards force on an object caused by gravity. Weight*

*is measured in Newtons.*

4. (a) When the forces on a moving object are balanced, that object will..... *continue to move at a constant speed.*
- (b) When an object has an unbalanced force acting on it, the object will..... *accelerate in the direction of the unbalanced force.*

5. (a)  $F = m a$                        $F = 90 \times 1.5$                        **$F = 135 \text{ N}$**
- (b)  $a = \frac{v}{t}$                        $a = 28 / 7$                        $a = 4 \text{ ms}^{-2}$
- $F = m a$                        $F = 1000 \times 4$                        **$F = 4000 \text{ N}$**
- (c)  $F = m a$                        $F = 80\,000 \times 3$                        **$F = 240\,000 \text{ N}$**
6. (a)  $a = F/m$                        $a = 650 / 65$                        **$a = 10 \text{ ms}^{-2}$**
- (b)  $a = F/m$                        $a = 9 / 0.045$                        **$a = 200 \text{ ms}^{-2}$**
- (c)  $m = F/a$                        $m = 9 / 1.8$                        **$m = 5 \text{ kg}$**

6N

11N

Thrust

Support (buoyancy)

7N

5N

Weight (gravity)

Friction

12N

11N

6N