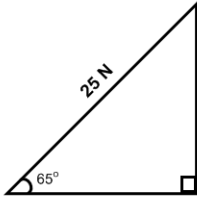
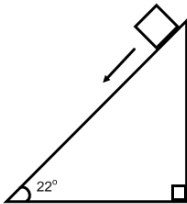


Effective force worksheet

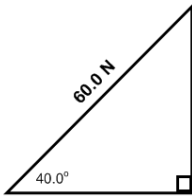
1. A person is pulling a box along the floor with a force of 25 N at an angle of 65° to the horizontal. What is the effective force?



2. What is the magnitude of the effective force of a box weighing 33 kg sliding down an inclined plane at a 22° angle?

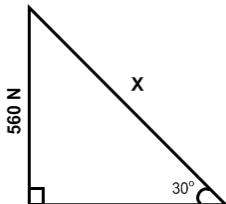


3. a- A person is pulling a bag along the floor with a force of 60.0 N at an angle of 40.0° to the horizontal. What is the effective force?

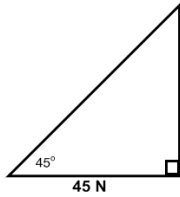


b- If the bag weighs 7.0 kg, will the perpendicular force be strong enough to lift the bag off the ground?

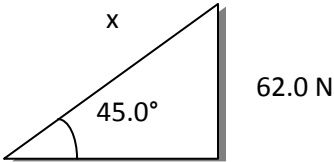
4. Bob is skiing down a hill, his weight is 560 N and the slope of the ski run is 30.0° . What is the magnitude of the effective force responsible for Bob's descent?



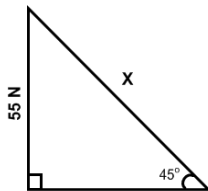
5. What is the force used by a man pulling a cart with an effective force of 45 N at a 45° angle?



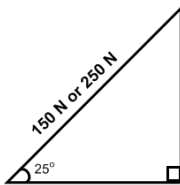
6. What is the force used by a man lifting a cart with an effective force of 62.0 N at a 45.0° angle?



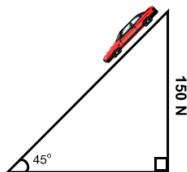
7. What is the effective force if a marble weighing 55 N slides down an inclined plane with a 45° angle?



8. Explain if each person will be able to lift their luggage weighing 35 kg off the floor if they both are pulling the luggage at a 25°, but person 1 is using 150 N of force and person 2 is using 250 N of force.

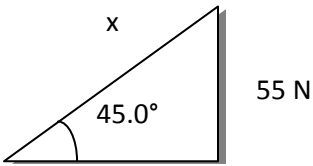


9. a- A toy car is placed on a ramp tilted at a 45° angle. If the weight of the car was 150 N, what is the magnitude of the effective force that makes the car slide down the ramp?

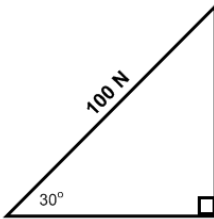


- b- How would the magnitude of the force change if the angle was 75°?

10. What is the force used by a man lifting a cart with an effective force of 55 N at a 45.0° angle?

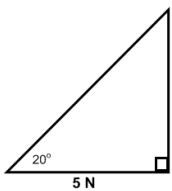


11. a- A person is pulling a sled along the snow with a force of 100 N at a 30° angle. What is the effective force?

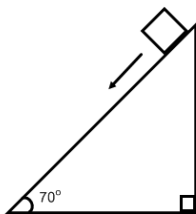


b- If the sled weighs 2 kg, will the perpendicular force be strong enough to lift the sled off the ground?

12. What is the force used by a woman pulling the garbage if the effective force was 5 N and the angle was 20° ?



13. What is the magnitude of the effective force of a box weighing 50.0 kg sliding down an inclined plane at an angle of 70.0° ?



14. Carol is snowboarding down a hill, her weight is 460 N and the slope of the ski run is 50° . What is the magnitude of the effective force responsible for Carol's descent?

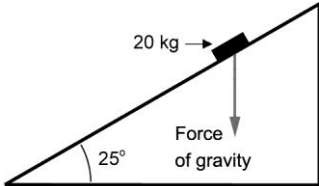
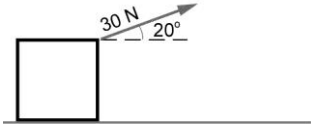
15. Explain if each person will be able to lift a bag of softballs weighing 10.0 kg off the floor if they both are pulling the bag at a 45° , but person 1 is using 150 N of force and person 2 is using 50.0 N of force.
16. a- A person is dragging her dog on the street for a walk with a force of 120 N at a 45° angle. What is the effective force?
- b- If the dog weighs 2 kg, will the perpendicular force be strong enough to lift the dog off the ground?
17. What is the force used by a woman pulling her child on a sled if the effective force was 45 N and the angle was 25° ?
18. Draw a diagram showing a force of 30.0 N at an angle of 20.0° to the horizontal. Indicate the following four elements: the line of action, the direction of application, the magnitude of the force and the point of application.
19. A child is playing with a car that weighs 15 N on a plane inclined at an angle of 20.0° . What is the gravitational force makes the car slide down the inclined plan.

20. a- A child is pulling a rope tied to a cart with a force of 30.0 N and at an angle of 25° . What is the effective force?

b- What is the component perpendicular to the distance travelled?

21. A cart weighing 20 N is on an inclined plane of 40° . What is the gravitational force component that makes the cart roll down the slope?

22. What is the effective force in each of the following situations?

<p>a) The box slides down the inclined plane.</p> 	
<p>b) The box slides along the ground.</p> 	

23. The effective force of a man pulling a cart is 75 N. The handle is at a 25° angle. If the maximum force he should apply is 50.0 N, is he using too much force?