

Physics 112
Quiz Review
Quiz → Next Class

1. Solve for x

a) $d = x t$

b) $h^2 = x^2 + b^2$

2. Identify as distance, displacement, speed, velocity or acceleration.

a) 15 m/s

c) 25 km/h

e) 5 m/s/s

b) 10 m East

d) 10 km/h West

f) 6 m/s²

1. a) $d = x t$
 $\frac{d}{t} = x$

b) $h^2 = x^2 + b^2$
 $h^2 - b^2 = x^2$
 $\sqrt{h^2 - b^2} = x$

2. a) 15 m/s \rightarrow Speed
b) 10 m East \rightarrow displacement
c) 25 km/h \rightarrow speed
d) 10 km/h West \rightarrow velocity
e) 5 m/s/s \rightarrow acceleration
f) 6 m/s² \rightarrow acceleration

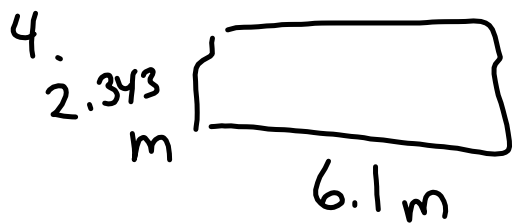
3. How many significant digits?

- a) 560 m
- b) 1.80×10^{10} m
- c) 606 cm
- d) 0.0870 m

4. Calculate the Area. $A = L \times W$



3. a) 560 m \rightarrow 2 c) 606 cm \rightarrow 3
b) 1.80×10^6 m \rightarrow 3 d) 0.0870 m \rightarrow 3



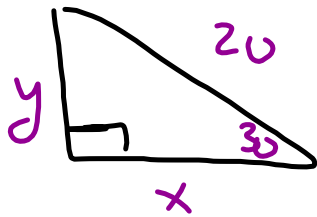
$$A = L \times w$$
$$A = 6.1 \text{ m} \times 2.343 \text{ m}$$

$$A = 14.2923 \text{ m}^2$$

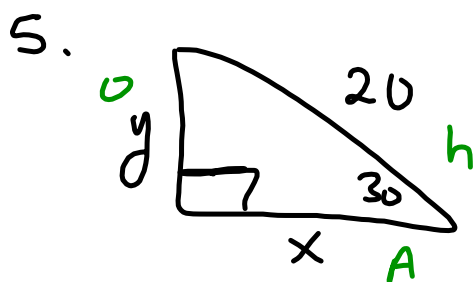
$$A = 14 \text{ m}^2$$

(2)

5. Solve for x & y



6. Explain E 30 N



$$\frac{x}{20} = \cos 30$$

$$20(\cos 30) = x$$

$$17.3 = x$$

~~$$y$$~~

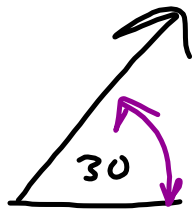
$$\sin 30 = \frac{y}{20}$$

$$20(\sin 30) = y$$

$$10 = y$$

6. E 30 N

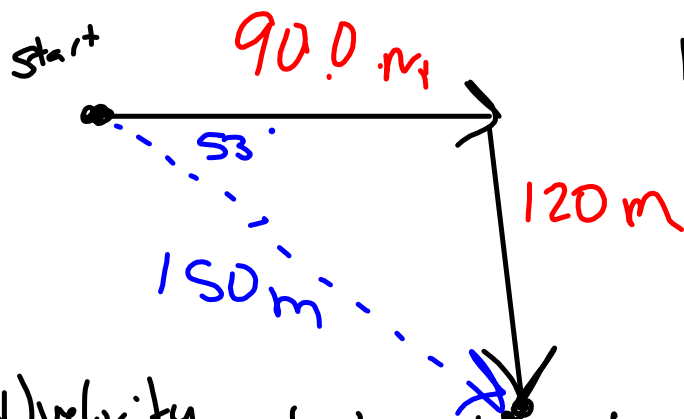
→ Head East, then turn
30 towards the North.



7. You head east for 90.0 m, then turn and go south for 120 m. This takes 55 sec. Determine:

a) distance
b) displacement

c) speed
d) velocity

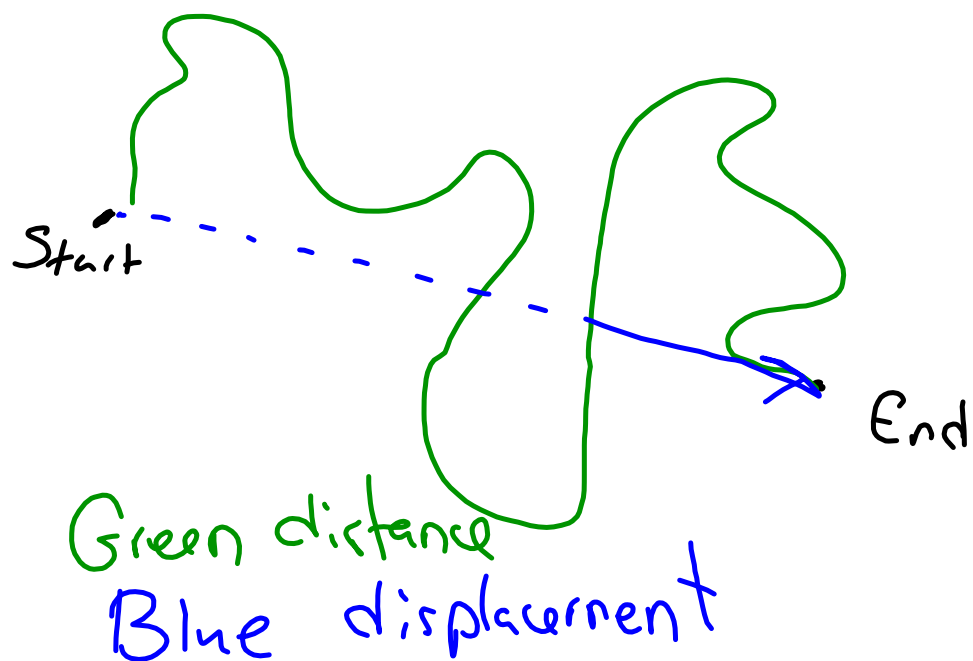


a) distance = $90 + 120$
 $= 210 \text{ m}$

b) displacement
 $150 \text{ m } \text{E } 53^\circ \text{ S}$

c) Speed = $\frac{\text{distance}}{\text{time}}$
 $= \frac{210 \text{ m}}{55 \text{ s}}$
 $= 3.8 \text{ m/s}$

d) velocity = $\frac{\text{displacement}}{\text{time}}$ end
 $= \frac{150 \text{ m } \text{E } 53^\circ \text{ S}}{55 \text{ s}}$
 $= 2.7 \text{ m/s } \text{E } 53^\circ \text{ S}$



Scalar \Rightarrow Magnitude only

10 m/s 25 km/h

vector \Rightarrow Magnitude & direction

10 m/s South

25 km/h Right

8. A car moving 32 m/s stops
in 4.0 seconds.

$$v_1 = ?$$

$$v_2 = ?$$

$$v = ?$$

$$a = ?$$

$$d = ?$$

8. 32 m/s 0 m/s $t = 4.0 \text{ sec}$

$$v_1 = 32 \text{ m/s}$$

$$v_2 = 0 \text{ m/s (stopped)}$$

$$v = \frac{32+0}{2} = 16 \text{ m/s}$$

$$a = \frac{v_2 - v_1}{t}$$

$$= \frac{0 - 32}{4.0}$$

$$= -8.0 \text{ m/s}^2$$

$$d = vt$$

$$= 16(4)$$

$$= 64 \text{ m}$$

"or"

$$d = v_i t + \frac{1}{2} a t^2$$

$$= 32(4.0) + \frac{1}{2}(-8.0 \text{ m/s}^2)(4.0 \text{ sec})^2$$

$$= 128 \text{ m} - 64 \text{ m}$$

$$d = 64 \text{ m}$$