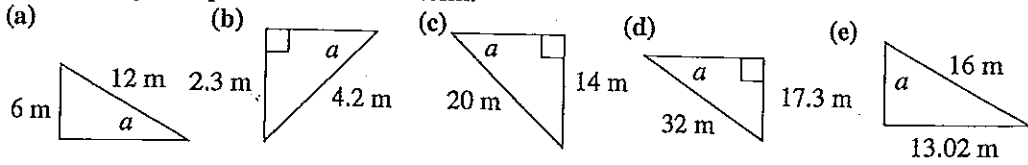


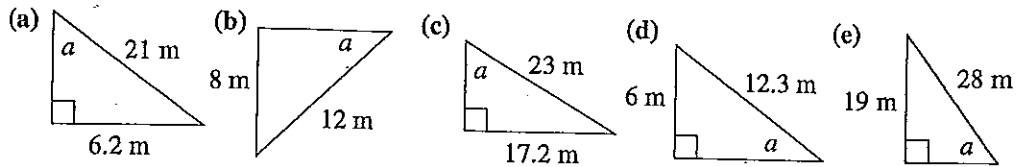
Trigonometry

A Trigonometry: Using sin to find angles

1 Find the angles expressed in decimal form:

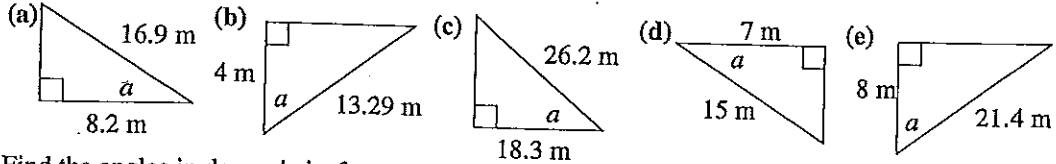


2 Find the angles expressed in degree/minute form:

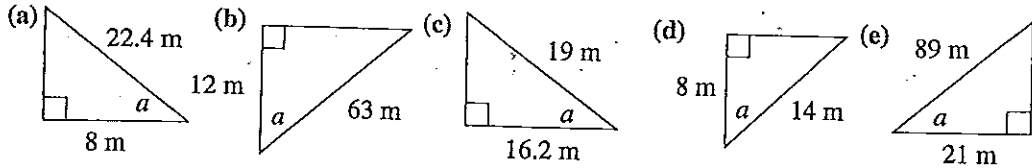


B Trigonometry: Using cosine to find angles

1 Find the angles in decimal form:

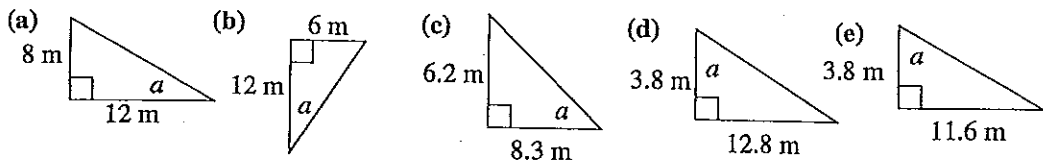


2 Find the angles in degree/min form:

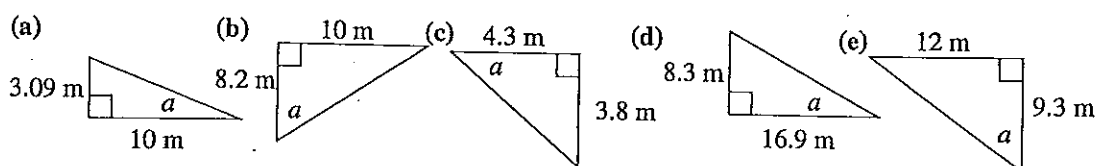


C Trigonometry: Using tan to find angles

1 Find angles expressed in decimal form:

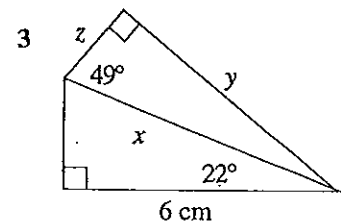
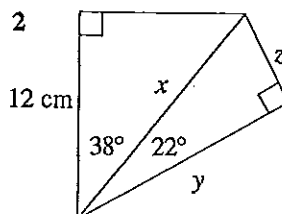
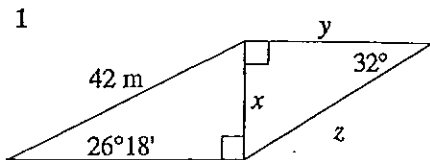


2 Find the angles expressed in degree/min form:



D Trigonometry: Composite figures

Find the missing lengths in the following:



E Trigonometry: Practical applications in two dimensions

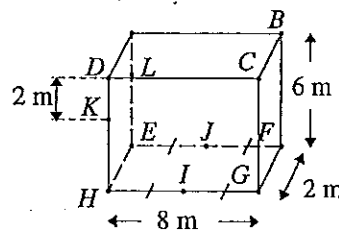
- 1 A brick wall 2.9 metres high casts a shadow of 11.3 m. Find the angle of elevation of the sun.
- 2 The angle of elevation of the top of the building is $52^{\circ}15'$, from a point on the ground 50 m away. Find the height of the building. What would the angle be if the observer moved 20 m closer to the building?
- 3 The angle of depression of a ship from the top of a 200 m tower is $63^{\circ}24'$. What is the line of sight distance from the tower to the ship and how far is the ship from the foot of the tower.
- 4 A ship sails 20 km on the bearing $N20^{\circ}E$ and then changes tack to sail 10 km on $S23^{\circ}E$. How far:
 - (a) East
 - (b) North is the ship from where it started?

F Trigonometry: Practical applications I

dimensionals

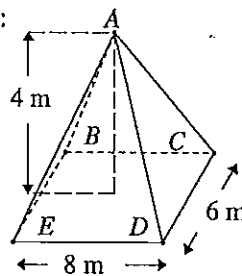
- 1 Find the angle between the planes:

- (a) $ABCD$ and $KLBC$
- (b) $ABCD$ and $IJBC$
- (c) $IJKL$ and $ADEH$
- (d) $IJKL$ and $EFHG$
- (e) $IJBC$ and $BCFG$



- 2 Find the angle that these planes make with the base:

- (a) ACD
- (b) ABC



Trig. Answers

- A 1 (a) 30° (b) 33.20° (c) 44.43°
(d) 32.73° (e) 54.46°
2 (a) $17^\circ 10'$ (b) $41^\circ 49'$ (c) $48^\circ 24'$
(d) $29^\circ 12'$ (e) $42^\circ 44'$

- B 1 (a) 60.97° (b) 72.48° (c) 45.70°
(d) 62.18° (e) 68.05°
2 (a) $69^\circ 5'$ (b) $79^\circ 1'$ (c) $31^\circ 30'$
(d) $55^\circ 9'$ (e) $76^\circ 21'$

- C 1 (a) 33.69° (b) 26.57° (c) 36.76°
(d) 73.47° (e) 71.86°
2 (a) $17^\circ 10'$ (b) $50^\circ 38'$ (c) $41^\circ 28'$
(d) $26^\circ 9'$ (e) $53^\circ 13'$

- D 1 $x = 18.61$ 2 $x = 15.23$ cm
 $y = 29.78$ m $y = 14.12$ cm
 $z = 35.12$ m $z = 5.70$ cm
3 $x = 6.47$ cm
 $y = 4.88$ cm
 $z = 4.25$ cm

- E 1 14.39° 2 64.58 m, $65^\circ 5'$
3 223.7 m, 100.2 m
4 (a) 10.75 km (b) 9.59 km

- F 1 (a) 14.04° (b) 56.31°
(c) 45° (c) 45°
(e) 33.69°
2 (a) 45° (b) 53.13°