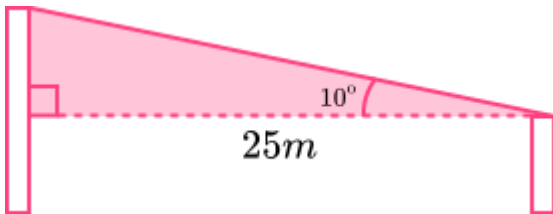# Trigonometry - Worksheet

**1.** A zip wire runs between two posts, **25**m **apart. The zip wire is at an angle of 10° to the horizontal. Calculate the length of the zip wire.**

a) 25.4m

b) 144.0m

c) 141.8m

d) 24.6m

---

2. A surveyor wants to know the height of a skyscraper. He places his inclinometer on a tripod 1m **from the ground. At a distance of 50**m **from the skyscraper, he records an angle of elevation of 82°.**
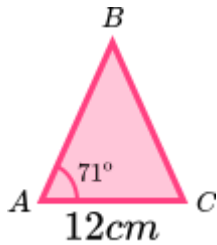**What is the height of the skyscraper? Give your answer to one decimal place.**
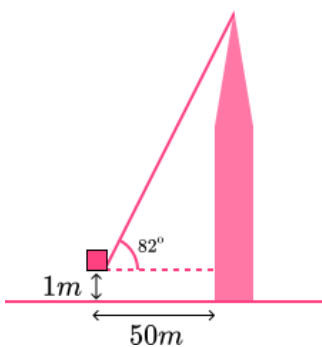
a) 355.8m

b) 7.0m

c) 356.8m

d) 49.5m

Trigonometry - Worksheet

3. Triangle ABC is isosceles. Work out the height of triangle ABC.

a) 6*cm*

b) 17.4*cm*

c) 34.9*cm*

d) 2.1*cm*

---

4. A builder is constructing a roof. The wood he is using for the sloped section of the roof is 4*m* long and the peak of the roof needs to be 2*m* high. What angle should the piece of wood make with the base of the roof?

a) 26.6°

b) 60°

c) 0.008°

d) 30°

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2
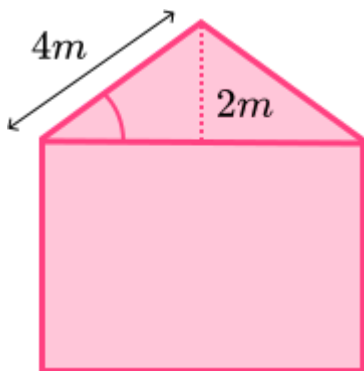
Trigonometry - Worksheet

5. A ladder is leaning against a wall. The ladder is $1.8m$ long and the bottom of the ladder is $0.5m$ from the base of the wall. To be considered safe, a ladder must form an angle of between 70° and 80° with the floor. Is the ladder safe?

ladder
1.8m
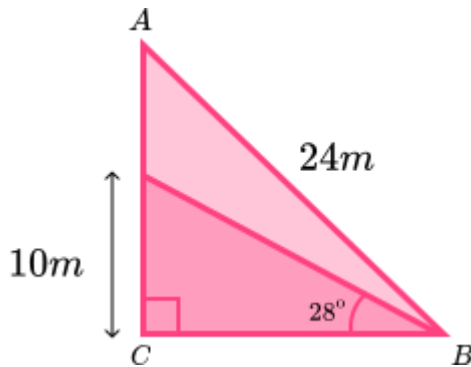
0.5m
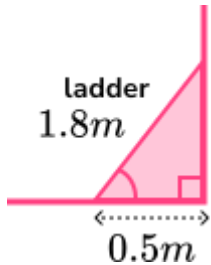
a) Yes

b) No

c) Not enough information

---

6. A helicopter flies $40km$ east followed by $105km$ south. On what bearing must the helicopter fly to return home directly?
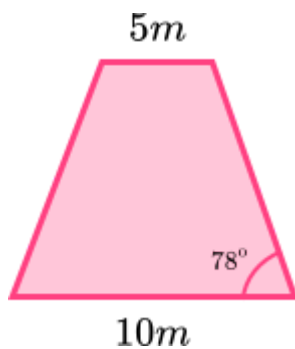
a) 21°

b) 201°

c) 159°

d) 339°

Trigonometry - Worksheet

7. Calculate the size of angle ABC. Give your answer to 3 significant figures.

a) 24.6°

b) 38.4°

c) 18.8°

d) 21.8°

---

8. Kevin's garden is in the shape of an isosceles trapezium (the sloping sides are equal in length). Kevin wants to buy enough grass seed for his garden. Each box of grass seed covers $15m^2$. How many boxes of grass seed will Kevin need to buy?

a) 6

b) 4

c) 5

d) 10

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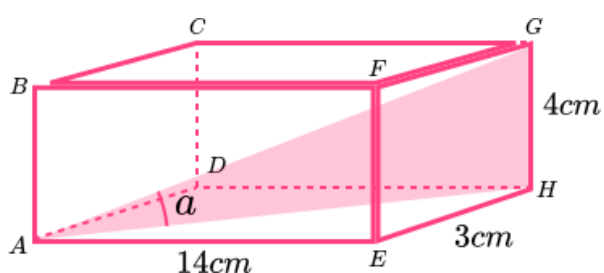
4

Trigonometry - Worksheet

9. Which of these values cannot be the value of *sin(θ)*?

a) $\frac{1}{2}$

b) $\frac{\sqrt{3}}{2}$

c) $\frac{5}{2}$

d) $\frac{-\sqrt{2}}{2}$

---

10. Write *4sin(60) + 3tan(60)* in the form $a\sqrt{k}$.

a) $5\sqrt{3}$

b) $2+3\sqrt{3}$

c) $\frac{3}{2}\sqrt{3}$
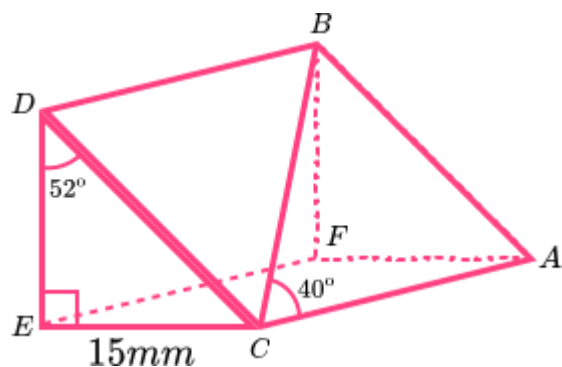
d) $\frac{1}{2}\sqrt{12} + 3$

---

11. Work out angle a, between the line AG and the plane ADHE.

a) 14.3°

b) 15.6°

c) 15.9°

d) 90°

Trigonometry - Worksheet

12. Work out the length of BC.

a) $30.0mm$
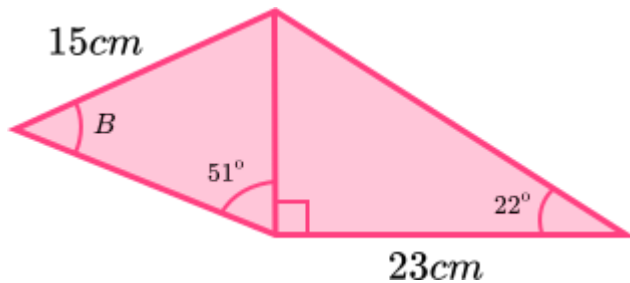
b) $19.0mm$

c) $23.3mm$

d) $29.6mm$

---

13. Ship A sails 40km due West and ship B sails 65km on a bearing of 050°. Find the distance between the two ships.

a) $76.3km$

b) $99.0km$

c) $52.5km$

d) $84.9km$

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6
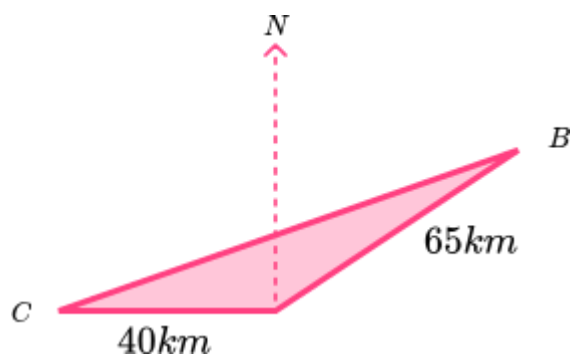
Trigonometry - Worksheet

14. **Find the size of angle B.**

a) 78°

b) 31.8°

c) 9.3°

d) 28.8°

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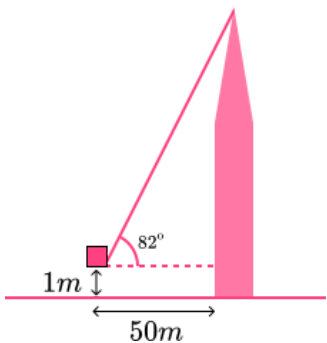
15. The area of the triangle is 16cm^2. Find the length of the side x.
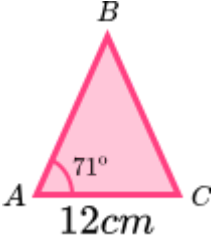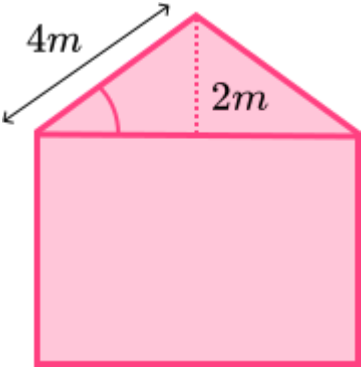
a) 5.0cm

b) 10.0cm

c) 5.3cm

d) 4cm

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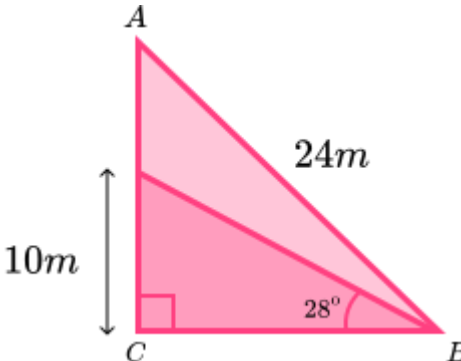
Trigonometry - Answers

	Question	Answer
1	A zip wire runs between two posts, $25m$ apart. The zip wire is at an angle of 10° to the horizontal. Calculate the length of the zip wire. **a)** 25.4m **b)** 144.0m **c)** 141.8m **d)** 24.6m	**a)** 25.4m
2	A surveyor wants to know the height of a skyscraper. He places his inclinometer on a tripod $1m$ from the ground. At a distance of $50m$ from the skyscraper, he records an angle of elevation of 82°. **What is the height of the skyscraper? Give your answer to one decimal place.** **a)** 355.8m **b)** 7.0m **c)** 356.8m **d)** 49.5m	**c)** 356.8m

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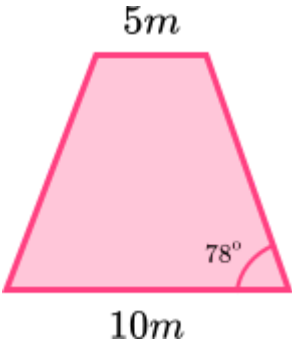
Trigonometry - Answers

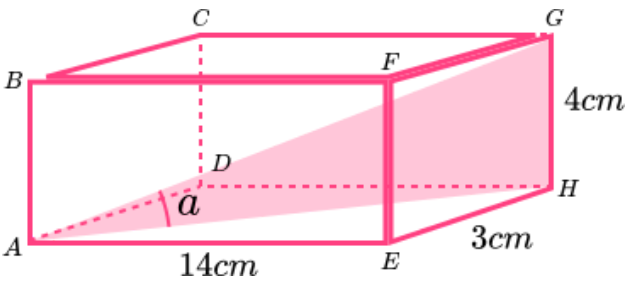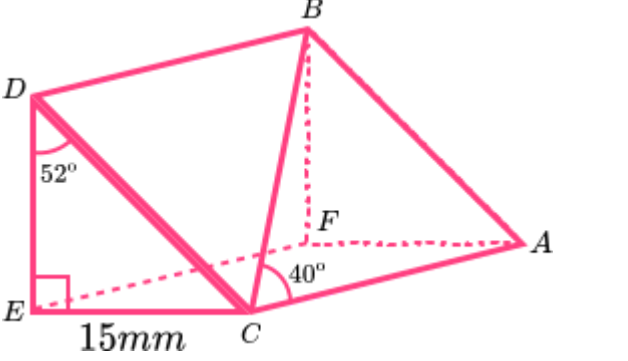| 3	Triangle ABC is isosceles. Work out the height of triangle ABC.	b) 17.4*cm*
	a) 6*cm* **b)** 17.4*cm* **c)** 34.9*cm* **d)** 2.1*cm*	
4	A builder is constructing a roof. The wood he is using for the sloped section of the roof is 4*m* long and the peak of the roof needs to be 2*m* high. What angle should the piece of wood make with the base of the roof? **a)** 26.6° **b)** 60° **c)** 0.008° **d)** 30°	d) 30°

Trigonometry - Answers

5	A helicopter flies **40km** east followed by **105km** south. On what bearing must the helicopter fly to return home directly? **a)** 21° **b)** 201° **c)** 159° **d)** 339°	**d)** 339°
6	Calculate the size of angle ABC. Give your answer to 3 significant figures. **a)** 26.6° **b)** 60° **c)** 0.008° **d)** 30°	**d)** 30°
7	Calculate the size of angle ABC. Give your answer to 3 significant figures. **a)** 24.6° **b)** 38.4° **c)** 18.8° **d)** 21.8°	**b)** 38.4°

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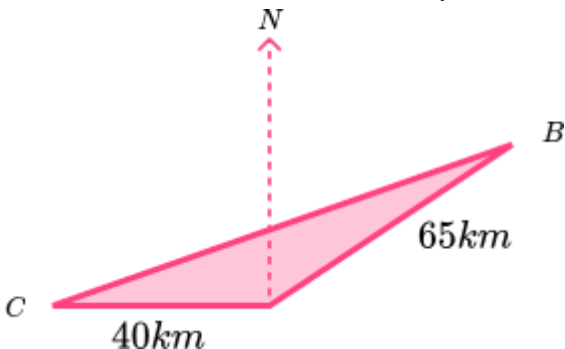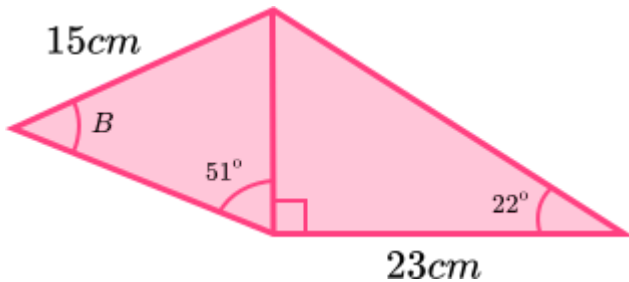
10

Trigonometry - Answers

8	Kevin's garden is in the shape of an isosceles trapezium (the sloping sides are equal in length). Kevin wants to buy enough grass seed for his garden. Each box of grass seed covers $15m^2$. How many boxes of grass seed will Kevin need to buy? $5m$ 78° $10m$ **a) 6** **b) 4** **c) 5** **d) 10**	**d) 6**
9	Which of these values cannot be the value of *sin(θ)*? **a)** $\frac{1}{2}$ **b)** $\frac{\sqrt{3}}{2}$ **c)** $\frac{5}{2}$ **d)** $\frac{-\sqrt{2}}{2}$	**c)** $\frac{5}{2}$
10	Write *4sin*(60) + *3tan*(60) in the form $a\sqrt{k}$. **a)** $5\sqrt{3}$ **b)** $2+3\sqrt{3}$ **c)** $\frac{3}{2}\sqrt{3}$ **d)** $\frac{1}{2}\sqrt{12} + 3$	**a)** $5\sqrt{3}$

Trigonometry - Answers

11	**11. Work out angle a, between the line AG and the plane ADHE.**	**d)** 6
	a) 14.3°	
	b) 15.6°	
	c) 15.9°	
	d) 90°	
12	**Work out the length of BC.**	**d)** $29.6mm$
	a) $30.0mm$	
	b) $19.0mm$	
	c) $23.3mm$	
	d) $29.6mm$	

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Trigonometry - Answers

	Question	Answer
13	Ship A sails **40***km* due West and ship B sails **65***km* on a bearing of 050°. Find the distance between the two ships. *N* *B* *65km* *C* *40km* **a)** 76.3*km* **b)** 99.0*km* **c)** 52.5*km* **d)** 84.9*km*	**b)** 99.0*km*
14	Find the size of angle B. 15*cm* *B* 51° 22° 23*cm* **a)** 78° **b)** 31.8° **c)** 9.3° **d)** 28.8°	**d)** 28.8°

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Trigonometry - Answers

| 15 | The area of the triangle is $16cm^2$. Find the length of the side x. **a)** $5.0cm$
 b) $10.0cm$
 c) $5.3cm$
 d) $4cm$ | **a)** $5.0cm$ |

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