Name:

Exam Style Questions

Trigonometry: Exact Values

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 341

1. Write down the exact value of Sin 0°

0

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(1)

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2. Write down the exact value of Cos 60°

$\frac{1}{2}$

.....

(1)

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3. Write down the exact value of Sin 30°

$\frac{1}{2}$

.....

(1)

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4. Write down the exact value of Tan 0°

0

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(1)

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5. Write down the exact value of Tan 45°

1

.....

(1)

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6. Write down the exact value of Cos 90°

0

.....

(1)

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7. Write down the exact value of Sin 90°

1

.....

(1)

8. Write down the exact value of Sin 180°

0

(1)

9. Write down the exact value of Cos 360°

1

(1)

10. Write down the exact value of Sin 360°

0

(1)

11. Write down the exact value of Cos 270°

0

(1)

12. Write down the exact value of Tan 180°

0

(1)

13. Write down the exact value of Sin 270°

-1

(1)

14. Write down the exact value of Cos 180°

-1

(1)

15. Write down the exact value of Sin 60°

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

.....

(1)

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16. Write down the exact value of Cos 45°

$\frac{\sqrt{2}}{2}$

.....

(1)

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17. Write down the exact value of Sin 45°

$\frac{\sqrt{2}}{2}$

.....

(1)

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18. Write down the exact value of Tan 30°

$\frac{\sqrt{3}}{3}$

.....

(1)

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19. Write down the exact value of Tan 60°

$\sqrt{3}$

.....

(1)

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20. Write down the exact value of Cos 30°

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

.....

(1)

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21. Write down the exact value of Sin 120°

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

.....

(1)

22. Write down the exact value of Sin 150°

$\frac{1}{2}$

.....

(1)

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23. Write down the exact value of Cos 120°

$-\frac{1}{2}$

.....

(1)

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24. Write down the exact value of Sin 210°

$-\frac{1}{2}$

.....

(1)

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25. Write down the exact value of Tan 300°

$-\sqrt{3}$

.....

(1)

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26. Write down the exact value of Cos 540°

-1

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(1)

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27. Write down the exact value of Cos 570°

$-\frac{\sqrt{3}}{2}$

.....

(1)

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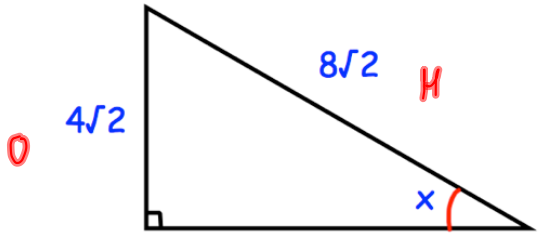
28. Write down the exact value of Sin 870°

$\frac{1}{2}$

.....

(1)

29. Below is a right angled triangle.



Show that angle x = 30°
Include all your working.

$\sin x = \frac{O}{H} = \frac{4\sqrt{2}}{8\sqrt{2}} = \frac{1}{2}$

$\therefore x = 30°$

(2)

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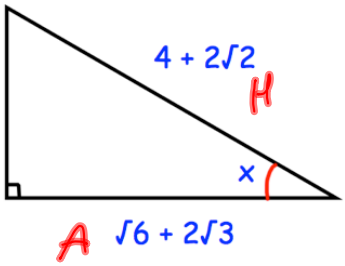
30. Below is a right angled triangle.



Show that angle x = 30°
Include all your working.

$\cos x = \frac{A}{H} = \frac{\sqrt{6}+2\sqrt{3}}{4+2\sqrt{2}} \times \frac{(4-2\sqrt{2})}{(4-2\sqrt{2})}$

$\frac{4\sqrt{6} - 2\sqrt{12} + 8\sqrt{3} - 4\sqrt{6}}{16-8} = \frac{-2\sqrt{12}+8\sqrt{3}}{8}$

$= \frac{-4\sqrt{3}+8\sqrt{3}}{8} = \frac{4\sqrt{3}}{8}$ **(2)**

$\cos x = \frac{\sqrt{3}}{2} \quad \therefore x = 30°$

31. Find the exact value of Sin(45°) + Cos(30°)

$\sin 45 = \frac{\sqrt{2}}{2}$

$\cos 30 = \frac{\sqrt{3}}{2}$

$\frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{2}$

$\frac{\sqrt{2}+\sqrt{3}}{2}$

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(3)

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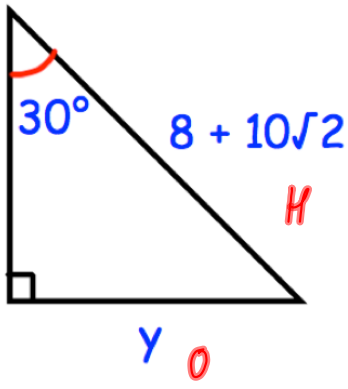
32. Shown below is a right angled triangle.



Find the exact length of the side labelled y.

$\sin 30 = \frac{y}{8+10\sqrt{2}}$

$\frac{1}{2} = \frac{y}{8+10\sqrt{2}}$

$4 + 5\sqrt{2} = y$

$4 + 5\sqrt{2}$

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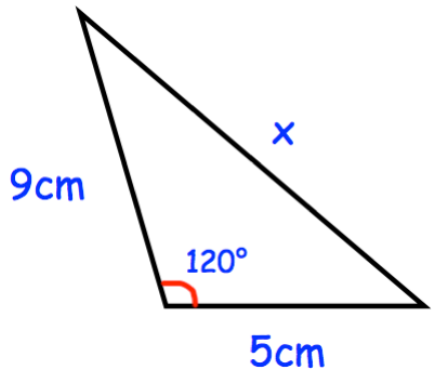
(4)

33. Shown below is a triangle.



Find the exact length of the side labelled x.

$a^2 = b^2 + c^2 - 2bc\cos A$

$x^2 = 9^2 + 5^2 - 2 \times 9 \times 5 \times \cos 120$

$x^2 = 81 + 25 - 90\left(-\frac{1}{2}\right)$

$x^2 = 106 + 45 = 151$

$x = \sqrt{151}$

.....cm

(4)