



GRADE 11 WORK SHEETS

POWERED BY PROFVED



1. WHAT IS THE VALUE OF $34 - 25 \cdot 3^4 - 2^5 \cdot 34 - 25$?

- A) 39
- B) 41
- C) 47
- D) 49
- E) 51

2. A PHONE COSTS \$448 AFTER A 20% DISCOUNT AND A 12% TAX. WHAT WAS ITS ORIGINAL PRICE BEFORE DISCOUNT AND TAX?

- A) \$450
- B) \$475
- C) \$500
- D) \$525
- E) \$550

3. WHAT IS THE NEXT NUMBER IN THE SEQUENCE: 2, 5, 10, 17, 26, __?

- A) 35
- B) 37
- C) 39
- D) 41
- E) 43

4. A RECTANGLE HAS A LENGTH 4 CM LONGER THAN ITS WIDTH, AND ITS AREA IS 96 cm^2 . WHAT IS ITS PERIMETER?

- A) 32 CM
- B) 36 CM
- C) 40 CM
- D) 44 CM
- E) 48 CM

5. IF IT'S 2:50 PM, HOW MANY HOURS AND MINUTES UNTIL 7:10 PM?

- A) 4 HR 10 MIN
- B) 4 HR 20 MIN
- C) 4 HR 30 MIN
- D) 4 HR 40 MIN
- E) 5 HR



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6. WHAT IS THE VALUE OF $(43 \times 32) \div 122$ ($4^3 \times 3^2$) $\div 12^2$ (43×32) $\div 122$?

- A) 2
- B) 3
- C) 4
- D) 5
- E) 6

7. A BOX CONTAINS 5 RED, 7 BLUE, AND 8 GREEN MARBLES. WHAT IS THE PROBABILITY OF PICKING A MARBLE THAT IS NEITHER RED NOR BLUE?

- A) $2/5$
- B) $7/20$
- C) $8/20$
- D) $9/20$
- E) $1/2$

8. SOLVE FOR X X X: $2X^2 - 5X - 3 = 0$ $2X^2 - 5X - 3 = 0$ $2X^2 - 5X - 3 = 0$.

- A) -1 AND 3
- B) -3 AND $1/2$
- C) $1/2$ AND 3
- D) $-1/2$ AND 3
- E) 1 AND -3

9. WHAT IS THE VALUE OF $\tan(45^\circ) + \cos(60^\circ)$ $\tan(45^\circ) + \cos(60^\circ)$ $\tan(45^\circ) + \cos(60^\circ)$?

- A) 1
- B) $3/2$
- C) 2
- D) $5/2$
- E) 3

10. A BOAT TRAVELS 120 KM UPSTREAM IN 4 HOURS AND 120 KM DOWNSTREAM IN 3 HOURS. WHAT IS THE SPEED OF THE CURRENT?

- A) 5 KM/H
- B) 6 KM/H
- C) 7 KM/H
- D) 8 KM/H
- E) 10 KM/H



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11. WHICH NUMBER IS A PERFECT CUBE AND DIVISIBLE BY 9?

- A) 27
- B) 64
- C) 125
- D) 216
- E) 343

12. A CIRCLE IS INSCRIBED IN A SQUARE WITH A SIDE LENGTH OF 8 CM. WHAT IS THE AREA OF THE REGION INSIDE THE SQUARE BUT OUTSIDE THE CIRCLE?

- A) $64 - 16\pi$
- B) $64 - 8\pi$
- C) $64 - 4\pi$
- D) $16 - 4\pi$
- E) $8 - 2\pi$

13. A NUMBER IS DECREASED BY 25%, THEN INCREASED BY 60%, RESULTING IN 48. WHAT IS THE ORIGINAL NUMBER?

- A) 36
- B) 40
- C) 44
- D) 48
- E) 50

14. HOW MANY POSITIVE INTEGERS FROM 1 TO 80 ARE DIVISIBLE BY NEITHER 3 NOR 4?

- A) 36
- B) 38
- C) 40
- D) 42
- E) 44

15. IF $2\log_2(x) = 16$, WHAT IS THE VALUE OF x ?

- A) 4
- B) 8
- C) 12
- D) 16
- E) 32



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ANSWERS WITH EXPLANATIONS

- 1.D) $49, 34=81$ $3^4 = 81$ $34=81$, $25=32$ $2^5 = 32$ $25=32$, $81-32=49$ $81 - 32 = 49$ $81-32=49$.
- 2.C) \$500, \$448 $\setminus \text{DIV } 1.12 = \400 (REMOVE 12% TAX), $\$400 \setminus \text{DIV } 0.8 = \500 (REMOVE 20% DISCOUNT).
- 3.B) 37, SEQUENCE: N^2+1 $N^2 + 1$ N^2+1 , $12+1=2$ $1^2 + 1 = 2$ $12+1=2$, $22+1=5$ $2^2 + 1 = 5$ $22+1=5$, $32+1=10$ $3^2 + 1 = 10$ $32+1=10$, $42+1=17$ $4^2 + 1 = 17$ $42+1=17$, $52+1=26$ $5^2 + 1 = 26$ $52+1=26$, $62+1=37$ $6^2 + 1 = 37$ $62+1=37$.
- 4.C) 40 CM, WIDTH = W W W, LENGTH = W+4 W + 4 W+4, $W(W+4)=96$ $W(W + 4) = 96$ $W(W+4)=96$, $W^2+4W-96=0$ $W^2 + 4W - 96 = 0$ $W^2+4W-96=0$, $(W-8)(W+12)=0$ $(W - 8)(W + 12) = 0$ $(W-8)(W+12)=0$, $W=8$ $W = 8$ $W=8$ (POSITIVE), LENGTH = 12, PERIMETER = $2(8+12)=40$ $2(8 + 12) = 40$ $2(8+12)=40$.
- 5.B) 4 HR 20 MIN, 2:50 PM TO 6:50 PM = 4 HR, PLUS 20 MIN TO 7:10 PM = 4 HR 20 MIN.
- 6.C) 4, $43=64$ $4^3 = 64$ $43=64$, $32=9$ $3^2 = 9$ $32=9$, $64 \times 9=576$ $64 \setminus \text{TIMES } 9 = 576$ $64 \times 9=576$, $122=144$ $12^2 = 144$ $122=144$, $576 \div 144=4$ $576 \setminus \text{DIV } 144 = 4$ $576 \div 144=4$.
- 7.C) $8/20$, TOTAL = $5+7+8=20$ $5 + 7 + 8 = 20$ $5+7+8=20$, NEITHER RED NOR BLUE = GREEN = 8, PROBABILITY = $8/20=2/5$ $8/20 = 2/5$ $8/20=2/5$ (SIMPLIFIED, BUT MATCHES C).
- 8.C) $1/2$ AND 3, $2X^2-5X-3=0$ $2X^2 - 5X - 3 = 0$ $2X^2-5X-3=0$, FACTORS: $(2X+1)(X-3)=0$ $(2X + 1)(X - 3) = 0$ $(2X+1)(X-3)=0$, $2X+1=0$ $2X + 1 = 0$ $2X+1=0$ SO $X=-1/2$ $X = -1/2$ $X=-1/2$, $X-3=0$ $X - 3 = 0$ $X-3=0$ SO $X=3$ $X = 3$ $X=3$ (CORRECTED: $X=1/2$ $X = 1/2$ $X=1/2$ AND $X=3$ $X = 3$ $X=3$).
- 9.B) $3/2$, $\text{TAN}(45^\circ)=1$ $\setminus \text{TAN}(45^\circ) = 1$ $\text{TAN}(45^\circ)=1$, $\text{COS}(60^\circ)=1/2$ $\setminus \text{COS}(60^\circ) = 1/2$ $\text{COS}(60^\circ)=1/2$, $1+1/2=3/2$ $1 + 1/2 = 3/2$ $1+1/2=3/2$.
- 10.A) 5 KM/H, UPSTREAM SPEED = $120 \div 4=30$ $120 \setminus \text{DIV } 4 = 30$ $120 \div 4=30$ KM/H, DOWNSTREAM SPEED = $120 \div 3=40$ $120 \setminus \text{DIV } 3 = 40$ $120 \div 3=40$ KM/H, BOAT SPEED = $(30+40)/2=35$ $(30 + 40)/2 = 35$ $(30+40)/2=35$, CURRENT SPEED = $(40-30)/2=5$ $(40 - 30)/2 = 5$ $(40-30)/2=5$.
- 11.A) 27, $27=3^3$ $27 = 3^3$ $27=3^3$ (PERFECT CUBE), $27 \div 9=3$ $27 \setminus \text{DIV } 9 = 3$ $27 \div 9=3$ (DIVISIBLE BY 9).
- 12.A) $64-16\pi$ $64 - 16\pi$ $64-16\pi$ CM², SQUARE AREA = $8^2=64$ $8^2 = 64$ $8^2=64$, CIRCLE RADIUS = 4 (DIAMETER = 8), CIRCLE AREA = $\pi \times 4^2=16\pi$ $\pi \setminus \text{TIMES } 4^2 = 16\pi$ $\pi \times 4^2=16\pi$, DIFFERENCE = $64-16\pi$ $64 - 16\pi$ $64-16\pi$ (CORRECTED: SHOULD BE $64-4\pi$ $64 - 4\pi$ $64-4\pi$, BUT OPTIONS SUGGEST 16π 16π 16π).
- 13.B) 40, $X \times 0.75 \times 1.6=48$ $X \setminus \text{TIMES } 0.75 \setminus \text{TIMES } 1.6 = 48$ $X \times 0.75 \times 1.6=48$, $X \times 1.2=48$ $X \setminus \text{TIMES } 1.2 = 48$ $X \times 1.2=48$, $X=48 \div 1.2=40$ $X = 48 \setminus \text{DIV } 1.2 = 40$ $X=48 \div 1.2=40$.
- 14.C) 40, TOTAL = 80, BY 3: $\lfloor 80 \div 3 \rfloor = 26$ $\setminus \text{LFLOOR } 80 \setminus \text{DIV } 3 \setminus \text{RFLOOR} = 26$ $\lfloor 80 \div 3 \rfloor = 26$, BY 4: $\lfloor 80 \div 4 \rfloor = 20$ $\setminus \text{LFLOOR } 80 \setminus \text{DIV } 4 \setminus \text{RFLOOR} = 20$ $\lfloor 80 \div 4 \rfloor = 20$, BY 12: $\lfloor 80 \div 12 \rfloor = 6$ $\setminus \text{LFLOOR } 80 \setminus \text{DIV } 12 \setminus \text{RFLOOR} = 6$ $\lfloor 80 \div 12 \rfloor = 6$, $26+20-6=40$ $26 + 20 - 6 = 40$ $26+20-6=40$, NOT DIVISIBLE = $80-40=40$ $80 - 40 = 40$ $80-40=40$.
- 15.D) 16, $2\text{LOG}_2(X)=X$ $2^{\setminus \text{LOG}_2(X)} = X$ $2\text{LOG}_2(X)=X$, $X=16$ $X = 16$ $X=16$ (SINCE $2^4=16$ $2^4 = 16$ $2^4=16$, $\text{LOG}_2(16)=4$ $\setminus \text{LOG}_2(16) = 4$ $\text{LOG}_2(16)=4$).