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# Primary Exercises 

## IN

## MENTAL

## Arithmetic

FOR

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\begin{aligned}
& \text { SIXTH YEAR } \\
& \square 19040
\end{aligned}
$$

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# Primary Exercises 

IN

## MENTAL

:rithmetic FOURTH YEAR $\because:$

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## QA 106 P764

1. What MENTAL VI.-1.
2. What is the cost of 2 doz . melons at $\$ 0.125$ each?
3. If . 37 : lb . of ham cost 6 cts., what will .875 ib .
cost ?
4. What must be added to $x^{2}$ of a day to make $\mathbf{3} \mathbf{~} \mathbf{9} 0$
min.
5. You are away from home from 8.30 abm. to $3 .{ }^{\text {A. }}$. p.m. ; how many irs. and min. are you away?
6. A grocer puts a 5 lb . package of pepper. . . . . . . . . . . ages of a $\frac{1}{2}$ oz. each; how many $\frac{1}{2}$ oz. packages
will he have? will he have?
7. What will be the cost of $2 \mathrm{ft} . \mathrm{A}$ in. of silk at $\$ 2.0$. C
a yard ?
8. A boy can walk 880 gds. in 15 min. ; how far ............
he walk in $2 \frac{1}{2}$ hours ? 18 ft at 10 cts a square yard?
9. If 10 articles cost $\$ 3 \frac{1}{3}$, how many can be bought for
$\$ 9$ ?
10. How many pieces $3 \frac{1}{2}$ inches long can be awn from
a board 2 yds. 1 ft. long?

## MENTAL FI.-2

1. If 8 yds . of calico can be bought for $\$ 2.00$, what must be paid for 28 yds .?
2. A woman bought 13 yds . of goods at 30 cts. a yard. What change did she reccive out of a $\$ 5$ bill?
A..................
3. If 8 pts. of berries cost 32 cts., what will a peek cost?
4. I divide 25 oranges between 2 boys, giving one 7 more than the other. How many did each receive?
A. . . . . . . . . . . . . .
5. What is the cost of 2 gross of pens at 5 cts. a dozen? A..................
6. If it cost $\$ 60$ to carpet a room 24 ft . long and 18 ft . wide, what is the carpet worth a yard ?
7. A hall is 13 ft . long and 9 ft . wide. What will it cost to paint it at 30 cts. a square yard?
A..................
8. How many strips of carpet 30 inches wide will it. take to cover a floor 12 ft . wide?
9. 1000 bush. of wheat cost $\$ 675$. What does one bushel cost?
10. A horse eats 12 quarts of oats a day. How many bushels will he eat during the month of September?

## MENTAL VI.-3.

1. A floor containing 120 sq . ft . is 8 ft . wide. How long is the floor?
2. How often will a wheel 2 gds. in circumference turn round in going a mile? A.
3. How many min. and see. will it take to count 1000 one-dollar bills, if you count four bills in a second?
4. A boy bought apples at the rate of 3 for 2 cts., and sold them at the rate of 2 for 3 cts. How much did he make on 30 apples?
5. (a) How many corners has a cube?
(b) How many edges has a cube?
(c) How many faces has a cube A.................. (d) How do you find cubic contents?
A.
6. One edge of a cube measures 8 in . (a) How far is it around one face?
A. . . . . . . . . . . . . . .
(b) What is the area of all its faces taken together? A.
(c) How many cu. in. of water would a cubical dish of that size hold?
7. How many cu. in. are there in a square stick of wood 2 ft . long, that measures 10 in . across one of its faces?
8. It is 24 in. around a square prism, and it stands 20 in. high. What is its cubic contents?

## MENTAL VI.-4.

1. The floor of a room containing 12 sq . yds . is 9 ft . wide. How long is it?

## A..................

2. It is 32 in . around a sq . prism, and it stands $\mathbf{1 6}$ in. high. How far is it around one of its oblong faces?
A..................
3. A box is 8 in . long, 6 in . wide, and 4 in. doep inside measurement. How many $1-\mathrm{in}$. cubes will it hold?
A. . . . . . . . . . . . . . .
4. A box is 3 ft . wide and a foot deep. How long must it be to hold 2 cu . yds. ?

## A.

5. What will a pile of 4 ft . wood, 4 ft . long and 4 ft . high be worth at $\$ 5.50$ a cord?
A.
6. A boy bought 40 cts. worth of marbles and then sold 8 cts. worth. What part of his marbles did he sell?

A
7. A grocer bought 10 gallons of berries and sold $2 \frac{1}{2}$ qts. ; what part did he sell?
A. . . . . . . . ......
8. A farmer having $7 \frac{1}{2}$ bush. of beans, put them into bags holding $2 \frac{1}{2}$ bush. each. How many bags?
A.
9. A stage, after making $\frac{1}{4}$ of $\frac{2}{5}$ of its trip, had 7 miles to go. How long was its trip?

## A.

10. If 8 men can do a piece of work in 34 days, how long will it take 1 man to do the work?

## MENTAL VI.-5.

1. How many sq. ft . in a board 10 ft . long and 9 in . wide?
A...................
2. In a 3 -in. cube how many cu. in.?
A.................. .
3. How many loads of earth, each 1 cu. yd., must be removed in digging a cellar 21 ft . long, 18 ft . wide, and 6 ft . deep?

A
4. How long must a box be that is 4 ft . wide and 3 ft . deep to contain 18 cubic ft. ?

## A

5. A boat sails 60 mi . in 5 hrs . What part of 240 mi . will she sail in one hr .?
A....................
6. What part will she sail in 9 hrs ?
A.
7. A boy pays 72 cts. for $1 \frac{1}{2}$ gallons of hickory nuts. What should be the cost of $1 \frac{1}{2} \mathrm{qts}$ ?

## A.

8. There is a pole $\frac{1}{2}$ and $\frac{1}{3}$ under water, and 10 ft . out; how long is the pole?
9. If 2 apples cost $4 \frac{2}{3}$ cts., how much will 5 apples cost?
A.
10. A man, owning $\frac{1}{4}$ of the stock of a bank, sold 4 of it . What part of his stock did he retain?

## MENTAL VI.-6.

l. The top of your desk is 21 in . long and 14 in . wide. What is its surface measure?
A. . . . . . . . . . . . . .
2. At 40 cts. a square foot, what will be the cost of a piece of land 30 ft . by 50 ft ?
3. From a pile of cord-wood containing 7 cords, a man sold 4 loads, each 12 feet long and 4 ft . high. Find how much remained.
4. When a bushel and a half of apples are worth $\$ 1.20$, what is the value of a peck and a half?
A..................
5. What part of $5 \frac{1}{2}$ acres is $\frac{1}{3}$ of $4 \frac{1}{2}$ acres?
A...................
6. What decimal of bushel and a half is a peck and a half? -
A.
7. There are 50 yds in a piece of cotton, and $12 \frac{1}{2}$ yds. are sold to a customer. What decimal of the piece remains?
A..................
8. At the ratc of $2 \frac{1}{4}$ bbls. for $\$ 9$, what will 7 barrels of apples cost?
9. I bought some grain for $\$ 120$, which is $\frac{5}{6}$ of what I sold it for. How much did I gain?
A..................
10. If 4 men can build a stone wall in 15 dys., how many men could have built it in 12 dys. ?

## MENTAL VI.-7.

1. The floor of your class-room contains 72 sq. yds. and it is 24 ft . wide. How long is it?
2. Find the thickness of a block of stone containing 360 cubic feet, its length being 30 feet, and its width 4 ft .
3. A boy can pick 3500 stones off a ploughed field in a day; at 20 cts. a thousand, how much will he earn in a week? per sq. rd. ?
4. If a pole 4 ft . long cast a shadow $4 \frac{1}{2}$ ft. long, what will be the length of the shadow a pole 6 ft . long will cast?
A. . . . . . . . . . . . . .
5. 2 y yds. of tape cost 13 cts.; what will 39 yds. cost?
6. What is the cost of 6 sq . yds. of cloth at 5 cts. a sq. ft. ?
7. How much must I pay for a piece of oilcloth $4 \frac{1}{2}$ ft . wide and 10 ft . long, at 60 cts. a square yard?
8. When land is worth $\$ 1$. a square rod, what is the cost of 24 acres?
9. If a boy can run $\frac{1}{8}$ of a mile in a minute, how long will it take him to run $\frac{2}{3}$ of a mile?

A

## MENTAL VI.-8.

1. What is the difference in area between a square table 5 ft . long and a table 6 ft . long and 4 ft . wide?
2. A pile of 4 ft . wood is 16 ft . long and 4 ft . high; what is it worth at $\$ 4.75$ a cord?
A.................
3. If 7 yds . of cloth cost $\$ 13$, what will 9 yds. cost $?$

A
4. What will be the cost of 208 bu . of potatoes at 50 cts. a bushel?
A..................
5. If a turkey cost $\$ 1 \frac{1}{5}$, how many turkeys at that rate can be bought for $\$ 8 \frac{0}{5}$ ? $?$
A..................
6. If $\frac{1}{3}$ of a box of soap costs 90 cts. what is the cost of $2 \frac{1}{2}$ boxes?
7. Granite is worth $\$ 3$ a cubic ft . What must be paid for a block 2 ft . thick, 3 ft . long, and 2 ft . wide?
A.................
8. After spending $\frac{1}{8}$ of my money, and losing ${ }^{2}$ of the remainder, I had $\$ 30$ left; how much had I at first?

A
9. How many square tiles, 6 in. on a side, will be re quired for a hearth 4 ft . by 2 ft .?
A. :
10. What is the cost of 648 articles at $\$ 1.12 \frac{1}{2}$ each ?

## A

## MENTAL VI.-9.

1. A floor is 21 ft . long and 6 yds. wide; what will be the cost of painting it, at 30 cts. a square yard?
2. At $\$ 4.25$ a cord, what is the value of a pile of cord wood 16 ft . long and 6 ft . high ?
3. What will be the cost of 620 yds . of calico at 25 cts. a yd. ?
4. Find the cost of 15 doz. oranges at 18 cts. a doze. . . . . A. ................. .
5. When hay is worth $\$ 7 \frac{1}{2}$ a ton, a man buys $\$ 2 \frac{1}{2}$ worth. What part of a ton does he buy?
6. $\frac{1}{2}$ of $\frac{3}{4}$ of a ton of coal costs $\$ 1 \frac{4}{5} ;$ how much will a
ton cost ?
7. A farmer sells 15 hens at 40 cts. each, and takes in exchange coffee worth 30 cts. a pound; how many pounds does he get?
8. Aff 8 men dig a cellar in 54 days, how long will it
take 7 men?
A.
9. George won 40 marbles, then lost $\frac{3}{4}$ of what he had won, and had 25. How lıany had he at first?
10. A man can do a piece of work in 20 min ; how many hours would it take him to do 24 times as
much? much ?

## MENTAL VI.-10.

1. How many yds of carpet 27 in . wide will it take to carpet a floor 18 ft .9 in . long and 9 ft . wide?

## A.....................

2. A block of wood 6 ft . long contains 18 cu . ft., and is 9 in. thick. How wide is it?
3. At $\$ 2.20$ a yard, what will 55 yards of tweed cost?
A. . . . . . . . . . . . . . .
4. A pole a rod in length is $5 \frac{1}{2} \mathrm{ft}$. in the mud. What fractional part of the rod is in the air?
A.
5. At $\$ 160$ an acre, what must I pay for a piece of land 10 rods by 12?
A.
6. How long must a box bo that is 2 ft . wide and 3 ft . deep to contain 38 cu. ft. ?
7. If $\frac{8}{8}$ of an orange cost $\frac{2}{3}$ of a cent, what will 5 oranges cost?
A.
8. $3 \frac{1}{4}$ barrels of apples enst $\$ 5$; what will $\frac{1}{2}$ barrel cost?
A.................. .
9. In a certain feed box there are oats enough for 4 horses for 10 days. If the farmer buys 6 more horses, how long will the oats last?
A.
10. A merchant buys sugar for 8 cts. a pound and sells it for 12 ets a pound. What fraction represents his gain?

## MENTAL VI.-11.

1. A square prism standing 18 in . high measures 12 in. across one of its faces. How many cu. ft. does it contain?
A...................
2. How many times will $4^{2}$ gallons of gil fill a lamp that holds $\frac{1}{2}$ of $\frac{3}{3}$ of 1 gallon?
A..................
3. What decimal represents the gain of $\$ 2$ on every $\$ 4!$
4. The length of a workman's day is increased from 8 to 9 hrs . What fraction represents the increase?
A.
5. Butter was 20 cts. a lb. in August and sold for 25 cts. in December. What decimal represents the increase in price?
A.
6. A dry acticle wcighing 40 lbs . weighs 50 lbs . when soaked in water. What fraction represents the increase in weight?
7. Mary had 12 cts , and gave Peter 3 cts. What decimal part of her money had she left?
A...................
8. 8 canoe paddles cost $\$ 10$; what will 12 cost?

## A...................

9. A girl walks $1 \frac{1}{2}$ miles in $\frac{3}{4}$ of an hour. How far can she walk in $5 \frac{1}{2}$ hours?
10. At the same rate, how long would it take her to walk 6 miles?
A.

## MENTAL VI. - 12.

1. 1 stick of square timber 12 ft . long and 12 by 12 in. How many cu. ft. in it?

## A

2. What part of a yard and a quarter is 1 ft .3 in ?
A.
3. In a certain pasture there is feed for 20 cows for $4 \frac{1}{2}$ days. How long would the same field keep 6 cows?
A. . . . . . . . . . ..... .
4. A boy started to play marbles with 2 doz. marbles, and had $1 \frac{1}{3}$ doz. when he finished. What fractional part of his marbles did he lose?
5. In a certain class-room there are 50 pipils, and 20 of them are boys. What decimal part of the class is boys?
6. What decimal of the class is girls ?
A....................
7. What per cent. of the class is boys?
8. What per cent. of the class is girls?
9. If $\frac{2}{3}$ of a doz. oranges cost 16 cts., how much will $3 \frac{1}{2}$ doz. cost?

A
10. If 6 men can do a piece of work in 5 dys., how much of the work can 3 men do in 8 dys. ?

A

## MENTAL VI.-13.

1. A block of wood 6 ft . long measures 12 in . across two of its faces, and 18 in . across the other two faces. How many cu. ft. does it contain?
2. What decimal of a day and a half is $\mathbf{9}$ hrs. ?
3. If a train goes $\frac{8}{8}$ of a mile in a min., how long iwill. it take to go 25 miles?
4. If 1 apple cost $\frac{2}{3}$ of a cent, what will $\frac{3}{4}$ of an apple cost?
5. What will 40 table-cloths cost at $\$ 1.75$ each ?
A. . . . . . . . . . . ....
6. After spending $\frac{1}{6}$ of my money and losing it of it , $\dot{\mathrm{I}}$ have $\$ 38$ left; how much had I at first?
A......................
7. A horse and carriage cost $\$ 160$; the carriage cos
of the whole amount. What did the horse cost?

A
8. How many yds. in 625 of a mile.
A.
9. A doctor gave $\$ 20$ for collecting bills to the amount of $\$ 80$. What fractional part of his bills did he pay for collecting?
A....................
10. Hats are bought for $\$ 4$ apiece and
What decimal represents the gain?

## MENTAL VI.-14.

1. What is the value of a stick of mahogany $6 \times 12 \mathrm{in}$. and 10 ft . long at $\$ 2.40 \mathrm{per} \mathrm{cu} . \mathrm{ft}$.
2. If a man can walk $\frac{4}{8}$ of a mile in $\frac{1}{j}$ of an hour, how long will it take him to walk 12 miles 19
3. In a trade a man gains 50 per cent. on his capital. What part of the capital equals his gain?
4. A woman bought A................ a gain of 25 per cent. How much did she gain?
A...................
5. A grocer sold 20 per cent of 50 barrels of flour; how.many barrels remained?
A.................
6. A dress is bought for $\$ 4$ and sold for $\$ 6 ;$ what was the gain per cent.?
A..................
7. A man's wages were $\$ 2$ a day; they were reduced $10 \%$. What are his wages now?
8. A grocer sold corn at a profit of 12 cts. a bushel. If the selling price was 72 cts . a bushel, what was his gain per cent?
9. How shall I mark goods that cost $\begin{aligned} & \text { } \$ 16 \text { so as to gain }\end{aligned}$ $12 \frac{1}{2}$ per cent.?
10. Find the per cent. gain on eggs bought at i2 cts. a doz., and sold for 14 cts.?

## MENTAL VI.-15.

1. Give the dimensions in inches of a box large enough to hold 10 bricks?
> A. . . . . . . . . . . . . .
2. Goods bought for $\$ 64$ are sold at a gain of $12 \frac{1}{\frac{1}{2}}$ per cent. What is the gain?
3. A cow that cost $\$ 40$ in the spring was sold for $\$ \mathbf{3 5 5}$. What is the loss per cent.?
4. When a profit of 25 cts. a bushel is made by selling corn at $\$ 1.25$ a bushel, what is the gain per cent.?
5. Flour that cost $\$ 4$ a barrel is sold at a gain of $10 \frac{10}{2}$ per cent. What is the selling price per barrel?
6. Find the cost of 75 baskets at $12 \frac{1}{2}$ cts. each.
A. . . . . . . . . . . . .
7. If $\frac{2}{3}$ of an apple cost $\frac{3}{4}$ of cent. what will $\frac{1}{2}$ of an apple cost?
8. A boat and its sail cost $\$ 120$. The sail sost $\frac{\text { s }}{10}$ of the whole amount. What did the boat cost?
A: . . . . . . . . . . . . . .
9. In a certain school there are 850 pupils on the roll, and on Monday $6 \%$ of them are absent. How many are present?
10. If 25 articles cost $\$ 8 \frac{1}{3}$, how many anticles can be bought for \$17?
A....................

## MENTAL VI.-16.

1. There is a hole 2 ft . square and 8 in . deep in a wall. How many bricks must be laid in it end-wise to completely fill it?
2. Goods bought for $\$ 96$ are sold at a gain of 331 per cent. What is the gain?
3. A boat hat cost $\$ 50$ in June was soid in October at a loss o1 30 per cent. What was it sold for?
4. A farmer raising 300 bu . of wheat sold $66{ }_{3} \%$ of it , and fed the rest to his stock. How much did he feed?

$$
\text { A. } 1 . . . . .
$$

6. If $\frac{4}{4}$ of a cargo is worth $\$ 2,400$, what is ...........
cargo worth ?
7. A man invested $\frac{2}{5}$ of his money in land; what per cent of his money did he retain?
8. If a family consume $\frac{3}{4}$ of a barrel of flour in a month, how long will $3 \frac{3}{4}$ barrels last them?
9. A farmer having 400 sheep loses $20 \%$ of them and sells $25 \%$ of the remainder. How many does he sell?
10. How many has he left?

A
A.

## MENTAL VI.-51.

1. A woman went to market with $\$ 45$ in her purse and spent $\$ 15$. What per eant. of her money did she spend?
A. ..................
2. A farmer bought a cor for $\$ 40$ and sold her at a loss of $10 \%$; what did he receive for her?
3. Frank bought silk at 60 cents a yard and sold it at a gain of $20 \%$; what did he get for it?
4. A girl carrying 5 doz. eggs to the store falls and breaks 6 of them; what per cent. did she break?
5. How many square inehes in the surface of a cubicalblock whose edges are 4 inches long?
6. What is the cubic conteats of the above block in inches?
7. How many rotations will a wheel 10 ft . in circumference make in going a mile?
8. A merehant luys flour at $\$ 5$ a barrel, and sells it so as to gain $20 \%$. What did he gain on one barrel?
9. If in a schmol of 216 pupils $66 \frac{2}{3} \%$ are boys, how many boys are there in the school?
10. I sold $12 \frac{1}{2} \%$ of a flock of 320 sheep at $\$ 5$ a head. What did I reseive for them?

## MENTAL VI.-52.

1. A grain dealer bought 200 bushels of wheat for $\$ 160$, and sold it at a gain of $20 \%$ on the cost. What did he sell it for a bushel?
A. . . . . . . . . . . . . . .
2. A boy had 40 marbles, and gave away 15 of them. What per cent. of his marbles did he give away?
A.
3. I lost $16 \frac{2}{3} \%$ of my money. What $\%$ of it had I left?

A
4. What part of 4 feet square is 4 square feet?
A. . . . . . . . . . . . . .
5. Bought a piece of silk for $\$ 40$, and sold it at $75 \%$ profit. For what was it sold?
A...................
6. $\$ 25$ is $20 \%$ of my money; how muoh have $I$ ?

A
7. What per cent. is gained on goods sold at double the cost?
8. If 6 men do a piece of work in 9 days, in how many days would 2 men do it?
A..................
9. What per cent. do I lose by buying hats for $\$ 5$ and selling them for $\$ 4$ apiece?
A..................
10. How many cords of wood in a pile 16 ft . long, 4 ft . high, and 4 ft . wide?

## MENTAL VI.-53.

1. If from every bushel he grinds, a miller takes out 4 quarts, what per cent. of the grain does he take?

A
2. A watch which cost $\$ 60$ was sold for $\$ 45$. The loss is what fraction of the cost?
3. What was the loss per cent.?
4. What per cent. of 5 feet square is 5 square feet?
5. How much is lost by selling goods that cost $\$ 15$ at $20 \%$ below cost?
A. . . . . . . . . . . . . .
6. A grocer bought 6 barrels of flour for $\$ 30$ and sold it at an advance of $25 \%$; how much did he get per barrel? .
A.
7. A farmer gained $\$ 6$ on a horse, which was $3 \%$ of his value; what was the value of the horse?
8. What per cent. do I gain by buying hats for $\$ 4$ and selling them for $\$ 5$ apiece?

## A...................

9. How much will 9 eggs cost at 15 cts. a dozen?

A
10. $\frac{1}{3}$ of the length of a pole is in the air, $\frac{1}{4}$ in the water, and 10 ft . in the ground; what is the length of the pole?
A.

## MENTAL VI.-54.

1. A planter set out 200 peach trees, and 40 died. What per cent. of them died?
2. In a box of 5 doz . oranges there are 6 oranges that are not good. What per cent. of the whole number are good?
A. . . . . . . . . . . . . . .
3. A horse was sold at $\$ 40$ more than cost, which was at a gain of $50 \%$; what was the cost of the horse?
A...................
4. At a gain of 5 per cent. what part of the cost equals the gain?
A.
5. A merchant sold $25 \%$ of 50 barrels of flour. How many barrels remained?
A. . . . . . . . . . . . . .
6. James bought a horse for $\$ 150$, and sold it for $\frac{2}{3}$ of the cost; required the loss per cent.
A...................
7. Mary sold her shawl for $\$ 15$, which was a gain of $25 \%$; what was the cost of the shawl?
A...................
8. How many strips of carpet 30 in . wide will it take to cover a floor 15 ft . wide?
A...................
9. If $\frac{8}{g}$ of a yard of silk cost $\$ 2$, what will 2 yards cost ?
10. Find the exact number of days from June 3rd to September 1st?

## MENTAL VI.-55.

1. A man who worked for $\$ 24$ a week had his salary diminished by $12 \frac{1}{2} \%$; what was it after the deduction?
A.
2. Potatoes which cost 80 cts. a bushel should be sold for how much to gain $25 \%$ ?
A.
3. At what price per bushel must they be sold to lose $40 \%$ ?
4. A mere nt sells damaged cloth at $\$ 2$ a yard and thereby loses $20 \%$. What was the cost of the cloth ?
5. Tones gains $50 \%$ on his capital; what part of the capital equals the gain?
A.
6. A grocer bought 10 barrels of flour for $\$ 50$ and sold them at a loss of $20 \%$; what did he receive for each barrel?

## A.

7. By selling a hat for $\$ 8$ a milliner lost 20 per cent. What was the value of the hat?
8. Jones earned $\$ 500$ \& $\quad$ ar, and spent $25 \%$ of it for books; how much had he remaining?
A. : . . . . . . . . . . . . .
9. At 25 cents a square foot, what is the cost of a piece of ground 20 feet front and 30 ft . deep?

## A.

10. If I spend $\frac{5}{6}$ of my money and have $\$ 3.50$ left; how much had I before I spent any?

## MENTAL VI.-56.

1. A farmer having 300 bushels of grain, sold $662 \%$ of it and fed the rest to his stock; how much did he feed?
A..................
2. $\$ 40$ is $25 \%$ more than how many dollars?
A....................
3. A horse trots 220 yds. in 40 seconds; how long will he take to trot a mile?
A.................. .
4. How many square tiles, 4 inches each side, will be required for a hearth 4 ft . by 2 ft ?
A.................. .
5. Find the interest on $\$ 200$ for 1 year at $6 \%$ ?

A
6. If 4 men can do a piece of work in $2 \frac{1}{2}$ days; how long will it take 20 men to do the same work?

A
7. Find the exact number of days from March 10 th to May 11th?
8. A market woman bought apples at 10 cts. a score, and sold them at 2 cents apiece; what was the gain per cent?
A. . . . . . . . . . . . . . . .
9. By selling eggs at 16 cts. a dozen I gain $33 \frac{1}{3} \%$; what was the cost?
A. . . . . . . . . . . . . .
10. What is the interest on $\$ 200$ for 3 months at $6 \%$ ?

## MENTAL VI.-57.

1. A man was hired to work 80 days, and lost $20 \%$ of his time; how many days did he work?
2. Bought a eow for $\$ 35$, whieh was $12 \frac{1}{2} \%$ less than her real value. What was her real value?

## A.

3. At 3 cents a foot find the cost of picture moulding to go around a room 15 ft . long and 12 ft . wide?
4. What is the interest on $\$ 50$ for 1 year at $8 \%$ ?
5. In a camp there are provisions for a party of 6 for 10 days. If one man leaves, how long will the provisions last?
6. If $\frac{3}{4}$ of a yard of eloth costs $\$ 3 \frac{3}{5}$; what will 5 yds. eost?
A...................
7. A carpet which cust $\$ 12$ was sold for $\$ 9$; what was the loss per cent.?
A.
8. If you put $\frac{1}{2}$ of your money in your purse, $\frac{1}{3}$ in your desk, and $\$ 20$ in the bank; how mueh money have you?
9. A lawyer reeeived $\$ 60$, which was $3 \%$ of the sum eollected. How much did he collect?
10. How long will it take $\$ 200$ to gain $\$ 25$ at $5 \%$ ?

## MENTAL VI. -58.

1. 32 gallons of oil were drawn from a cask containing 96 gallons. What per cent. of the whole remained in the cask?
2. Tom has 20 marbles and Fred. has 50. Tom's marbles are what per cent. of Fred's?
3. A floor containing 12 sq. yds. is 9 ft . wide; how long is it?
4. What is the intercst on $\$ 50$ for 6 months at $8 \%$ ?
A.
5. A boy lost $\frac{3}{10}$ of his money and had 35 cts. left; how much money had he at first?
6. A drover sold 80 cows from a herd of 400 cattle. What was the per cent. of cattle sold?
7. If wages advance from $\$ 1.60$ to $\$ 1.80$ a day, what is the per cent. of increasc?
8. By sclling potatoes at 20 cts. a bushcl I gained $20 \%$. What was the cost?
A..................
9. How much money can I borrow at $6 \%$ if I pay an annual interest of $\$ 420$ ?
10. In what time will a principal double itself at $5 \%$ ?

## MENTAL VI.-59.

1. A grocer sells sugar for $10 \%$ more this year than last. If he sells for $\$ 11$ a barrel this year, what was last year's price?
2. How many 1 -in. cubes can be put into a box 4 in. high, 5 in. wide, and 9 in . long, inside measurement?
3. How many square inches of paper will it take to cover the inside bottom of the above box?

- A...................

4. How many sq. in. in the surface of the interior sides and ends of this box?
A. . . . . . . . . . . . . .
5. Find the simple interest on $\$ 200$ for 2 years at $5 \frac{1}{2} \%$. A..................
6. If $\frac{7}{8}$ of a yard of cloth cost 56 cts., what will 3 jds. cost?
A. . . . . . . . . . . . . .
7. A lot of chickens was sold for: $\$ 24$, and $25 \%$ was gained. For how much should they have been sold to gain $20 \%$ ?
8. A stationer lost $20 \%$ by selling paper at 20 cts. a quire. What did the paper cost a ream?
A...................
$\$ 60$ for 18 months at
9. What is the simple interest on $\$ 60$ for 18 months at $4 \%$ ?
10. At what rate per cent. will $\$ 500$ gain $\$ 60$ in 2 years?
A..........
g paper at
a ream ?
A. .................

## MENTAL•VI.-60.

1. A man sold a cow for $\$ 20$, which was $20 \%$ less than she cost; what did she cost?
2. By selling eggs at 18 cts. a dozen, $\bar{I}$ lose $25 \%$. What would be the selling price to gain $25 \%$ ?
A.
3. What is the interest on $\$ 600$ for 1 yr .6 nis . at $8 \%$ ?
4. What principal will gain $\$ 60$ at $5 \%$ in 2 yrs. ?
A..................
5. In what time will $\$ 100$, at 7 per cent., give $\$ 14$ interest?
A..................
6. At what per cent. will $\$ 200$, in 8 years, give $\$ 36$ interest?
A..................
7. I sold a watch for $\$ 60$, thereby gaining $20 \%$; what
per cent. would I have gained by selling it for $\$ 75$ ?
A. . . . . . . . . . . . . . .
8. What will $4,250 \mathrm{ft}$. of lumber cost at $\$ 20$ per M. ?
A...................
9. How many cubic feet of earth were removed to make a well 40 ft . deep and 4 ft . square?
A. ..................
10. If 2 men do a piece of work in $6 \frac{1}{2}$ days, how long would it take 3 men ?
A.

## MENTAL VI-61.

1. I pay $\$ 12$ per week for board this ycar, which is $20 \%$ less than I paid last year; what did I pay last year?
2. By selling his dog for $\$ 6$ less than it cost, Fred. lost 15 per cent.; required the cost of the dog?
A...................
3. Find the interest on $\$ 200$ for 1 yr. 3 mos. at $6 \%$ ?

## A...................

4. What principal will gain $\$ 12$ in 6 mos . at $6 \%$ ?
A..................
5. In what time will $\$ 100$, at 6 per cent., give $\$ 21$ interest?
A. . . . . . . . . . . . . . .
6. At what rate will $\$ 40$, in 5 years, give $\$ 20$ interest? A
7. A boy sold his knife for 40 cents, which was $20 \%$ less than cost; at what price must he have sold it to gain $20 \%$ ?
A.................. .
8. I bought oranges at 20 cts. a dozen, and sold them at a gain of $20 \%$. For what did I sell them apiece?

A
9. If I had sold them for 3 cts. apiece, what should I have gained per cent.?
A...................
10. How many cords of wood in a pile of wood 28 ft . long, 4 ft . wide, and 4 ft . high ?

## MENTAL VI.-62.

1. Tea that cost 80 cts. is sold to gain $20 \%$. What is the selling price?

## A..................

2. After paying $30 \%$ of his debts, a merchant found that $\$ 210$ would pay the remainder; what did he owe at first?
A..................
3. In a school of 70 pupils 42 are boys; what percentage of the pupils are girls?
A..................
4. A man bought a horse for $\$ 200$ and sold it for $\$ 13$ more. His gain was what per cent. of the cost?

A
5. If a merchant buvs paper at $\$ 1.50$ a ream and sells it at 10 cents a quire, what is his gain per cent.?
6. I have $\$ 35$, which is $5 \%$ of what my brother has. How much has my brother?
7. If a bushel and a half of beans cost 75 cts., what will 8 qts. cost?
A...................
8. What was the loss per cent. of selling milk for $4 \frac{1}{2}$ cts. a quart that cost 5 cts.?
A. . . . . . . . . . . . . . .
9. How long will it take 12 men to do what 8 men can do in $4 \frac{1}{2}$ days?
10. At what rate will any sum double itself in 20 years 'at simple interest?

## MENTAL VI.-63.

1. What per cent. is gaincd on an article bought at $\$ 4.50$ and sold for $\$ 6$ ?
A..................
2. How must goods that cost $\$ 16$ be marked so as to gain $12 \frac{1}{2} \%$ ?

A
3. A merchant bought cranberrics at $\$ 4.80$ a bushel; for how much a bushel must he sell them to gain 30 . cents a peck?
4. If onc boy can do a picce of work in 3 days, and another in 5 days, how much can both do in one day?
A.
5. At $\$ 2.00$ a rod, what will it cost to enclose with a fence a lot of land $5 \frac{1}{2}$ rods square?

> ^. . . . . . . . . . . . . . . .
6. How long will it take for $\$ 400$ to gain $\$ 120$ at $2 \frac{1}{2} \%$ ?
A.
7. What number diminished by $20 \%$ is 60 ?
A. . . . . . . . . . . . . . .
8. At what rate per cent. will $\$ 500$ gain $\$ 60$ in 2 years? A. . . . . . . . . . . . . . .
9. A poor woman paid 15 cts. for a basket of coal weighing 25 lbs . At the same rate what would she pay for a ton?
A.
10. A fruit dealer buys oranges at 15 cts. a dozen, and sells theia at $t^{1} \cap$ rate of 2 for 3 cts. What is his gain or loss per cent.?

A

## MENTAL VI.-64.

1. Find the per cent. gained on oil bought at 12 cts. and sold at 14 cts. a gallon.
2. What number increased by $20 \%$ of itself, equals 481
3. In what time will any sum double itself at $8 \%$ simple intcrest?
4. How long will it take $\$ 80$ to amount to $\$ 100$ at $5 \%$ ?
5. Find the interest on $\$ 200$ for 1 yr. 3 mos. at $8 \%$ ?

## A. . . . . . . . . . . . . .

6. There is flour cnough in camp for 4 persons for $12 \ddagger$ months. How long will it last 7 persons?
A.
7. A horse was sold at a loss of $\$ 50$, which was $10 \%$ of the cost; what was the cost?

## A. ................

8. If $\frac{5}{6}$ of a pound of pruncs cost 10 cts., what will 3 of a pound cost?
9. Joncs lost $60 \%$ on a watch by sclling it for $\$ 40$; what should he have sold it for to gain $60 \%$ ?
A.
10. A farmer sold corn for 20 cts. a hushel less than cost, which was at a loss of $40 \%$; what was the cost?

## MENTAL VI.—65.

1. What per cent. is gained by selling coal at $\$ 6$ a ton that cost $\$ 5$ a ton?
2. What number diminished by $30 \%$ of itself equals 28 ? simple interest?
A.................. .
3. Find the simple interest of $\$ 400$ at $5 \%$ for 2 grs. 9 mos. ?
4. At what per cent. will $\$ 40$, in 5 years, give $\$ 20$ simple interest?
A. . . . . . . . . . . . . .
5. What principal will, in 8 years, at 6 per cent., give $\$ 24$ interest?
A.
6. A farmer sold $\frac{8}{8}$ of his cows and then had 25 cows remaining; how many had he at first?

## A...................

8. How many yds. of fencing will it take to enclose a lot of land 100 ft . square?

A
9. How many gallons of ice-cream will be sufficient for 60 people, reckoning 1 quart for 4 people?
10. If a cubic foot of water weighs 1,000 lbs., how many pounds of water in a cistern 10 ft . long, 4 ft . wide, the water standing 18 inches deep?
A.

## MENTAL VI.-66.

1. By selling papers at 5 cts. each, a boy gains $662 \%$; what did they cost him?

## A...................

2. In what time will $\$ 100$, at $6 \%$, give $\$ 21$ ?
3. What principal will in 6 years, at 5 per cent., give $\$ 60$ interest?

## A.

4. What is the simple interest of $\$ 600$ for 2 years, 3 months, at 8 per cent.?
5. Mary gave $\frac{1}{2}$ of her money for silk and $\frac{1}{3}$ for satin, and had $\$ 10$ left; how much had she at first?
A.
6. How many rotations will a wheel 10 ft . in circumference have to make in going $\frac{1}{4}$ of a mile?
7. If a horse eats 8 quarts of oats a day, how long will 6 bushels last him?
8. How many square inches in the surface of a block 10 inches long, 10 inches wide, and 4 inches thick?

> A.
9. What is the area in sq. ft . of the walls of a room 12 ft . long, 8 ft . wide, and 8 ft . high ?
10. How many yds. of carpet $\frac{5}{6}$ of a yd. wide will be required to cover a floor containing 15 sq . yds.?


